DOCUMENT RESUME

ED 241 590 TM 840 141

AUTHOR Buchanan, Anne E.; Romberg, Thomas A.
TITLE Data Collection Procedures and Descriptive Statistics for the Grade Three Achievement Monitoring Test (A-3 and A-4), Coordinated Study No. 1.
INSTITUTION Wisconsin Center for Education Research, Madison.
SPONS AGENCY National Inst. of Education (ED), Washington, DC.
REPORT NO WCER-WP-321
PUB DATE Aug 83
GRANT NIE-G-81-0009
NOTE 422p.; For related document, see ED 240 169.
PUB TYPE Reports - Research/Technical (143) -- Statistical Data (110) -- Tests/Evaluation Instruments (160)

EDRS PRICE MF01/PC17 Plus Postage.
DESCRIPTORS Achievement; Achievement Tests; Addition; *Data Collection; Educational Objectives; *Grade 3; *Longitudinal Studies; *Mathematics; Primary Education; Problem Solving; Sampling; Skill Development; Statistics; Subtraction
IDENTIFIERS *Developing Mathematical Processes

ABSTRACT

This paper documents the achievement monitoring component of a three-year study on the acquisition of addition-subtraction problem-solving skills by young children. A set of performance objectives contained in or ancillary to ten instructional units on sentence-writing for verbal problems and algorithms specified test content. Tests measuring group progress toward these objectives were administered after each unit. Data for the tests given after the two units covered in the fall semester of grade 3 are presented in this paper. The scores for each objective, developed using matrix sampling procedures, indicated mastery of addition and subtraction without regrouping, mastery of the addition algorithm for numbers 0-99 and near-mastery of the subtraction algorithm for numbers 0-99. These results reflected the instructional emphasis. There was marked improvement on several of the problem-solving 0-99 and sentence-writing 0-99 objectives not previously mastered, though only one of these objectives was actually mastered. With the exception of the subt-join-addend sentence-writing 0-20 objective, progress (or maintenance) on the objectives associated with the numbers 0-20 was excellent. (Author)

**********
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
**********

Working Paper No. 321

# DATA COLLECTION PROCEDURES AND DESCRIPTIVE STATISTICS FOR THE GRADE THREE ACHIEVEMENT MONITORING TESTS (A-3 AND A-4), COORDINATED STUDY NO. 1

by

Anne E. Buchanan and Thomas A. Romberg

Report from the Program on Student Diversity and Classroom Processes: Skill Development

Thomas A. Romberg and Thomas P. Carpenter
Faculty Associates

James M. Moser
Senior Scientist

Wisconsin Center for Education Research
The University of Wisconsin
Madison, Wisconsin

August 1983

The research reported in this paper was funded by the Wisconsin Center for Education Research which is supported in part by a grant from the National Institute of Education (Grant No. NIE-G-81-0009). The opinions expressed in this paper do not necessarily reflect the position, policy, or endorsement of the National Institute of Education.

# Wisconsin Center for Education Research

## MISSION STATEMENT

The mission of the Wisconsin Center for Education Research is to understand, and to help educators deal with, diversity among students. The Center pursues its mission by conducting and synthesizing research, developing strategies and materials, and disseminating knowledge bearing upon the education of individuals and diverse groups of students in elementary and secondary schools. Specifically, the Center investigates

- diversity as a basic fact of human nature, through studies of learning and development
- diversity as a central challenge for educational techniques, through studies of classroom processes
- diversity as a key issue in relations between individuals and institutions, through studies of school processes
- diversity as a fundamental question in American social thought, through studies of social policy related to education

The Wisconsin Center for Education Research is a noninstructional department of the University of Wisconsin-Madison School of Education. The Center is supported primarily with funds from the National Institute of Education.

## Table of Contents


| | Page |
|---|---|
| List of Tables | vii |
| List of Figures | ix |
| Abstract | xi |
| Introduction | 1 |
| Background Information | 5 |
| Subjects | 5 |
| Curriculum Materials and Instructional Objectives | 5 |
| Instruction | 7 |
| Achievement Monitoring Plan and Tests | 8 |
| Overview of the Three-Year Plan | 8 |
| Objectives Assessed in Grade 3 | 13 |
| Description of the Tests | 16 |
| Data Collection Procedures | 25 |
| Test Groups | 25 |
| Schedule | 26 |
| Procedure | 26 |
| Results | 28 |
| Scoring the Tests | 28 |
| Subtest and Item Statistics | 28 |
| Progress on the Objectives | 38 |
| Conclusion | 54 |
| References | 57 |
| Appendix A Administrator's Manuals and Student Tests—Forms U, V, W | 59 |
| Appendix B Item Statistics for Forms U, V, W, for the Total Population | 101 |
| Appendix C Performance by Objective for the Two Schools and Six Classes | 229 |

## List of Tables


| Table | | Page |
|---|---|---|
| 1 | Time Spent on Instruction in Algorithm Topics . . . . . | 9 |
| 2 | Objectives Assessed in Grade 3 . . . . . | 15 |
| 3 | Outline of Multiple-choice Subtest Items . . . . . | 17 |
| 4 | Outline of Sentence-writing Free Response Subtest Form . | 22 |
| 5 | Outline of Addition and Subtraction Facts Recall Items--Speeded Subtests . . . . . | 23 |
| 6 | Item Content of Addition and Subtraction Algorithms Timed Subtests--Forms U, V, and W . . . . . | 24 |
| 7 | Assignment of Students to Test Form . . . . . | 25 |
| 8 | Objectives Subtest Statistics for Forms U, V, and W for Two Administration Times . . . . . | 30 |
| 9 | Addition Facts Recall - Speeded Subtest Statistics for Forms U, V, and W for Two Administration Times . . . . . | 31 |
| 10 | Subtraction Facts Recall - Speeded Subtest Statistics for Forms U, V, and W for Two Administration Times . . . | 32 |
| 11 | Addition Algorithms - Timed Subtest Statistics for Forms U, V, and W for Two Administration Times . . . . . | 33 |
| 12 | Subtraction Algorithms - Timed Subtest Statistics for Forms U, V, and W for Two Administration Times . . . . . | 34 |
| 13 | Item Statistics for the Sentence-writing C-20, subt-join-addend (11-15) Item, Item 11M, Form U . . . . . | 39 |
| 14 | Progress Toward Objectives Across Administration Times as Represented by Proportion of Items Answered Correctly for Total Population . . . . . | 40 |
| 15 | Relationship Between Items Attempted and Items Answered Correctly for the Algorithm Timed Tests . . . . . | 52 |

## List of Figures


| Figure | | Page |
|---|---|---|
| 1 | Factors influencing pupil performance . . . . . | 2 |
| 2 | Overview of Achievement Monitoring Program . . . . . | 10 |

## Abstract

This paper is the last in a series of four reports that document the achievement monitoring component of a three-year study on the acquisition of addition-subtraction problem-solving skills by young children. A set of performance objectives contained in or ancillary to ten instructional units on sentence-writing for verbal problems and algorithms specified test content. Tests measuring group progress toward these objectives were administered after each unit. Data for the tests given after the two units covered in the fall semester of grade 3 are presented in this paper. The scores for each objective, developed using matrix sampling procedures, indicated mastery of addition and subtraction without regrouping, mastery of the addition algorithm for numbers 0-99 and near-mastery of the subtraction algorithm for numbers 0-99. These results reflected the instructional emphasis. There was marked improvement on several of the problem-solving 0-99 and sentence-writing 0-99 objectives not previously mastered though only one of these objectives was actually mastered. With the exception of the subt-join-addend sentence-writing 0-20 objective, progress (or maintenance) on the objectives associated with the numbers 0-20 was excellent.

## Introduction

The Mathematics Work Group of the Wisconsin Center for Education Research is presently conducting a program of research focused on children's acquisition of concepts and skills related to addition and subtraction of whole numbers. A major aim of mathematical instruction is to enable students to acquire concepts and skills requisite for solving problems of many types. A goal of our current research is to understand how pedagogical and psychological factors are related to their acquisition.

The interrelationship of pupil performance on selected arithmetic skills, pupil cognitive processes, instructionsl msterials, and teachers' classroom behaviors is depicted in Figure 1. Using this framework, we are proceeding to:

1. identify important addition and subtraction skills;
2. review past empirical data or collect new dats on these skills;
3. re-examine these mathematical skills and hypothesize how they are related to underlying cognitive skills;
4. examine the instructional materials designed to teach these skills; and
5. conduct s series of empirical studies on the sppropriateness of particular teacher classroom behaviors, the appropriateness of instructional materials, and the relationship of specific cognitive skills to mathematicsl skills.

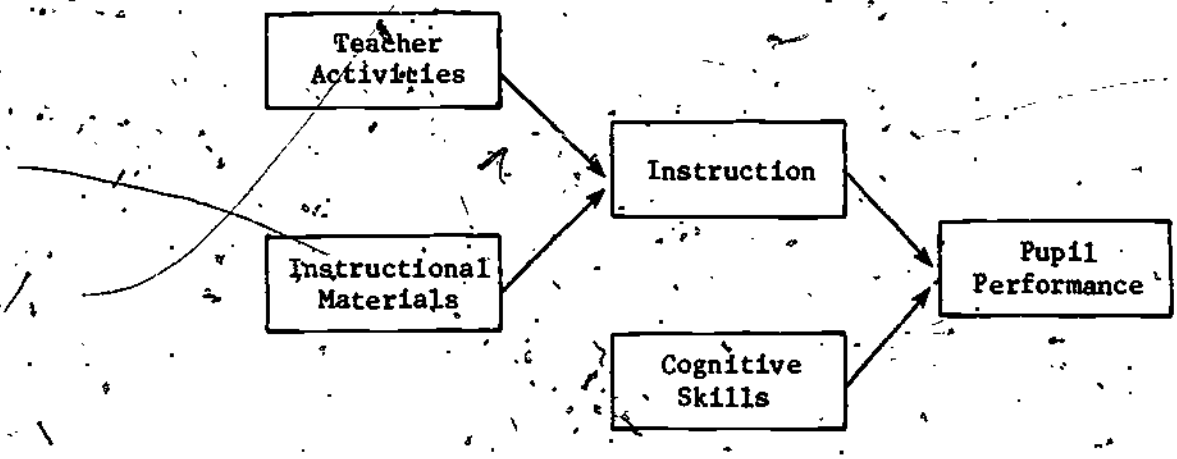



Figure 1. Factors influencing pupil performance.

The work of the Mathematics Work Group is built around the conceptual framework exemplified in Figure 1. The empirical and theoretical investigations generally involve two or more of the factors depicted and have been organized into four major categories. These are a conceptual paper series, a set of short empirical studies, a major longitudinal study, and an invitational conference of scholars.

This paper is one of a series of summary reports from the longitudinal study. Approximately 180 students in three schools were identified as subjects for the study. One school with about 60 students chose not to continue into the second year of the study. Thus, about 120 children were followed for three school years. Pupil performance was measured in several ways:

1. Individual interviews. At several times during each school year, individual children were administered a set of problem tasks dealing with addition and subtraction. The interviewer attempted to ascertain the children's solution strategy, correctness of answer, type of errors made, and modeling procedures.
2. Group-administered paper-and-pencil tests. There were two categories of tests:
   a. Achievement monitoring. These tests measured pupil progress toward a set of performance objectives contained in the instructional materials. By means of matrix sampling procedures, estimates were made of group performance. Achievement monitoring tests were

given shortly after the completion of the instructional units related to arithmetic objectives.

b. Topic inventories. These were very short tests that measured pupil progress toward mastery of the objectives of a specific instructional unit or topic. Every subject took the same test, resulting in a measure of individual performance.

Each topic inventory was given only once, providing a measure of performance on a few objectives at a single point in time; in contrast, there were repeated administrations of the same achievement monitoring test, in order to examine change in performance over time on a broad set of objectives.

Instruction and classroom environment were assessed by direct classroom observation of teacher actions, pupil behaviors, and instructional materials. A trained observer was present each day the instructional units, or topics, dealing with arithmetic objectives were used. Organizational and grouping measures were noted, along with interactions between teacher and pupils and among pupils. Measures of pupil engaged time were estimated by observing six target students.

The purpose of this paper is to report the administration of and results for the achievement monitoring tests given to grade 3 students during the fall semester of the third year of the study in the period October 1980 through December 1980. The tests were administered following instruction in th two altorighm topics (A-3 and A-4). The paper has four major sections: background information on the subjects and instructional materials, description of the three-year achievement monitoring plan and the tests, report of

the data collection procedures, and discussion of the results. Samples of the tests, administrator's manuals, and complete item and test statistics appear in the appendices.

## Background Information

### Subjects

The subjects were 120 third-grade students in six classes from two elementary schools in predominantly middle class areas. These students were subjects for the study in grades one and two as well.

### Curriculum Materials and Instructional Objectives

Each of the schools used as their mathematics curriculum the Developing Mathematical Processes (DMP) program (Romberg, Harvey, Moser, & Montgomery, 1974). Ten new instructional topics on addition-subtraction, to be integrated into the regular DMP sequence of topics, had been developed for the three-year study. The topics covered during grade 1 (S-1, S-2, and S-3) were sentence-writing topics; three more sentence-writing topics (S-4, S-5, and S-6) which further developed the same objectives were completed in the fall semester of grade 2. For the spring semester of grade 2 and first months of grade 3, four algorithm topics (A-1 through A-4) were taught. Instruction in other DMP topics was carried out as usual in all three grades, except for topics replaced by the ten special topics.

The ultimate goal of the ten topics was that children develop efficient problem-solving behavior in addition and subtraction problem situations. The specific goals believed to result in this behavior are the

ability to symbolize verbal problems in the form of written addition or subtraction sentences and the ability to retrieve addition and subtraction "facts" and/or use addition-subtraction algorithms.

The content of the four algorithm topics, the latter two of which were taught in the fall semester of grade 3, is summarized here:

Topic A-1. This topic introduced addition and subtraction of two-digit numbers with computation that involved no regrouping or renaming. The types of verbal problems covered in the six sentence-writing topics (joining, separating, and comparison) were presented again using two-digit numbers (see Buchanan & Romberg, 1982a). The problems were again analyzed using the part-part-whole chart, and horizontal and vertical sentences which represented the problems were written and solved. Computation with two-digit numbers not associated with verbal problems was also practiced.

Topic A-2. Two-digit addition problems requiring regrouping were introduced, including problems with a two-digit and a one-digit number. The addition algorithm was practiced both with problems arising from verbal situations and in isolation. Two-digit subtraction without regrouping was reviewed.

Topic A-3. Two-digit subtraction problems requiring regrouping were introduced and practiced both with and without a verbal problem context. Problems containing a two-digit and a one-digit number were also included. The inverse relationship between addition and subtraction was covered and the addition algorithm was practiced.

Topic A-4. The content of the preceding topics was reviewed. Problems with three addends were introduced.

The skills covered in these four topics were expressed formally by the following instructional objectives common to all:

1. Given an open addition or subtraction situation involving the numbers 0-99, writes a sentence that represents the situation.
2. Given two numbers whose sum is 0-99, computes their sum.
3. Given two numbers 0-99, computes their difference.

Of the many objectives included in the regular DMP topics taught in the grade 2 spring semester, only those which developed the notions of numerousness, ordering, and place value for the numbers 0-99 were essential in terms of the present study, since this content was prerequisite to the objectives of the algorithm topics. These prerequisite objectives were:

1. Given a set of 0-99 objects (or the spoken number), represents the numerousness of that set by writing the appropriate number.
2. Given a number 0-99, represents it physically or pictorially.
3. Given a set of numbers 0-99, orders them.
4. Given a number 0-99 writen in compact/expanded notation, writes it in expanded/compact notation.

Instruction

Instruction for the algorithm topics A-3 and A-4 occurred in the period from September 1980 to December 1980. The topic pertaining to numerousness, ordering, and place value for the numbers 0-99 had been completed in grade 2

just before A-1. The teachers cooperated with the request that the two A topics be taught according to the specifications in the instructional materials.

The mathematics classes were homogeneously grouped at school 1 into four levels. The two classes in school 3 were heterogeneously grouped. (School 2 did not participate in the study after the first year.)

The time allowed for mathematics was:

| | |
|---|---|
| school 1, four classes | 60-minute periods twice a week |
| | 40-minute periods three times a week |
| school 3, two classes | 35-minute periods daily |

It had been suggested that each topic be covered in about three weeks. The actual range of time spent by the six classes appears in Table 1 and indicates that on the average classes spent a week more than the recommended time on A-3 and a week less than the recommended time on A-4. Since there was much variability among classes in the amount of time per topic, interesting relationships to achievement might be demonstrated. However, no attempt to do so will be made in this report which is concerned with performance of the total population.

## Achievement Monitoring Plan and Tests

### Overview of the Three-Year Plan

Figure 2 presents an overview of the achievement monitoring plan for the three years of the study. All objectives on which performance was assessed are listed in abbreviated form with an indication of the points in time when instruction ocourred, when mastery was expected, and when

Table 1

Time Spent on Instruction in Algorithm Topics

| Topic | Minimum | Average | Maximum |
|---|---|---|---|
| A-3 | 485 min., 15 days[a] | 930 min., 22.2 days | 1156 min., 26 days |
| A-4 | 237 min., 7 days | 425 min., 10.0 days | 636 min., 13 days |

[a]Minutes and days do not necessarily represent the same class.

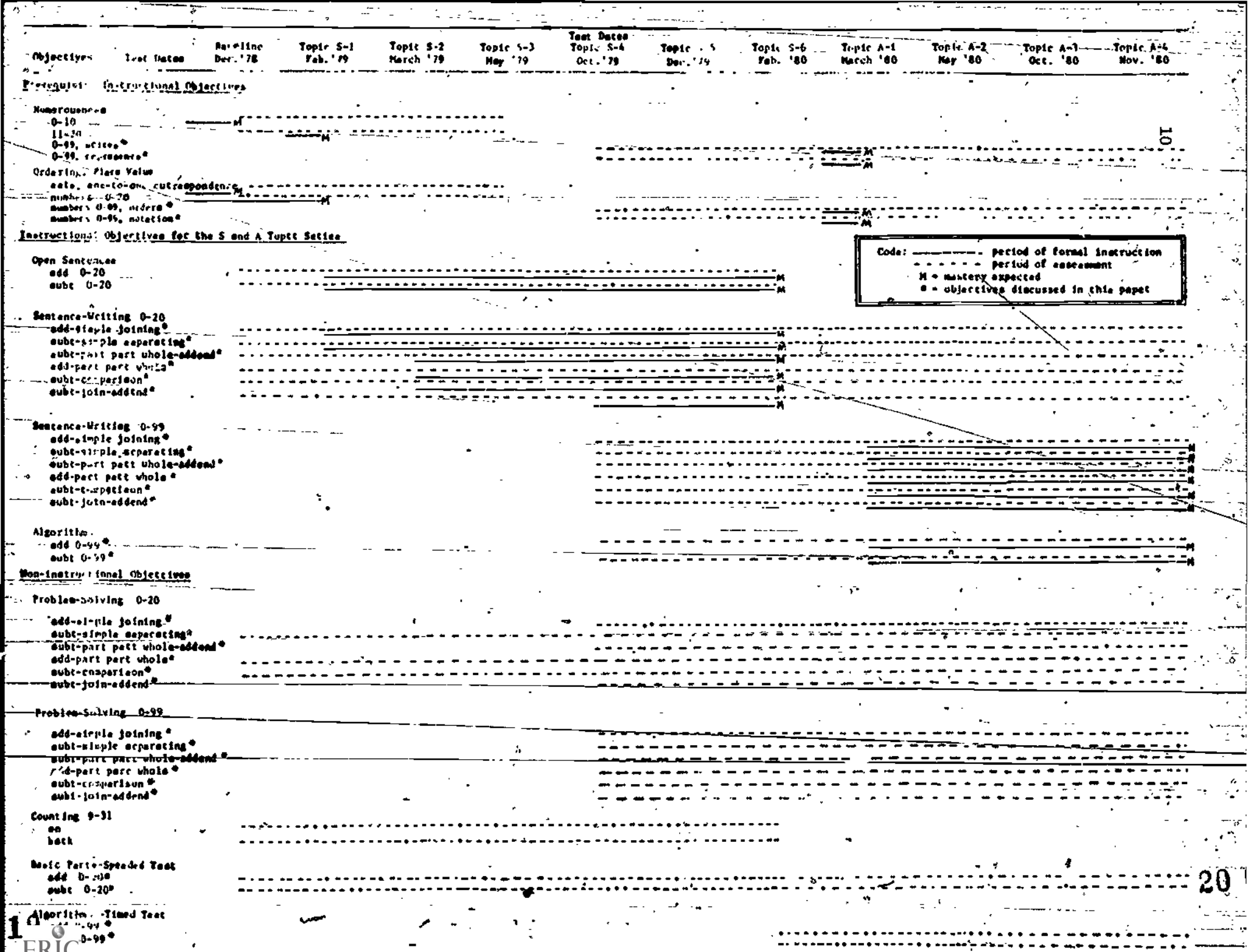



Figure 2. Overview of Achievement Monitoring Plan.

achievement was monitored. The schedule called for 11 test times: the baseline test and a test after each instructional topic.

Following the general rule that objectives should be assessed both prior to and following instruction, yet avoiding test situations which would be overly frustrating or extremely easy for the students, four overlapping test periods were identified and objectives added to or dropped from the achievement monitoring schedule accordingly. The four test periods covered the middle of grade 1 to the end of grade 1 (baseline through S-3), the middle of grade 1 to the middle of grade 2 (baseline through S-6), the beginning of grade 2 to the middle of grade 3 (S-4 through A-4), and the middle of grade 1 to the middle of grade 3 (S-1 through A-4). Achievement was assessed a minimum of four times and a maximum of 11 times per objective.

In order to limit the time any student spent in a testing situation and yet to gather a maximum amount of information about progress toward each objective, a matrix sampling plan based on earlier work in this area was followed (Romberg & Braswell, 1973). All students in each class were assigned randomly to one of three test groups. Each test group was then assigned one of three test forms for each administration period. Each objective was represented by items on at least two and usually all three of the test forms. A description of the tests is given in the following section.

The objectives included in the achievement monitoring program were classified as (1) prerequisite instructional objectives, which were those considered necessary for achievement of the objectives of the S and

A topics, (2) instructional objectives for the S and A topics, and (3) non-instructional objectives. The noninstructional objectives pertained to skills which were not formally taught in the regular DMP program or the S and A topics. However, since there was potentially a relationship between growth in these skills and progress on the formal instructional objectives, they were included in the test program. The noninstructional skills were:

1. problem-solving 0-20 and 0-99
2. counting on and counting back
3. recall of basic addition-subtraction facts under a speeded test condition
4. use of addition-subtraction algorithms under a timed test condition

The problem-solving objectives were created for achievement monitoring because the instructional objectives stated for the S and A topics specified sentence-writing skills and open sentence/algorithmic skills as discrete objectives but did not actually express in another objective the ability to integrate these skills in problem-solving situations. Assessment of problem-solving per se was also of interest because these data paralleled that gathered in the individual interview component of the study.

The objectives were also organized in terms of general mathematical content areas such as numerousness, ordering, and open sentences. (See Figure 2.) Each of these areas represented what may be thought of as a composite objective. For example, in the area of numerousness, there

was an individual objective related to writing 0-99 and another objective for representing 0-99; when these two objectives were treated as one, they formed a composite objective called numerousness. The composite objectives will be used in later analyses in which aggregate data are desirable to reduce the number of variables. In the present paper, the discussion primarily concerns individual objectives.

The sentence-writing objectives were stated as composite objectives in the instructional materials; that is, there was no explicit breakdown into individual objectives for each problem type, such as joining, separating and comparison. For two reasons, the sentence-writing objectives were broken down into several discrete objectives, each reflecting a different problem situation: first, the various problem situations were introduced at different points in the sequence of sentence-writing topics; second, and more importantly, the achievement monitoring data will eventually be integrated with data from the interview component of the study which was gathered and analyzed in terms of problem type.

Objectives Assessed in Grade 3

The prerequisite instructional objectives and the instructional objectives for the A topics included in the test program for grade 3 were stated in full in the first section. The sentence-writing objective for the S topics was also assessed, though the two open sentence objectives for these topics were dropped after S-6. Instruction for these three objectives had been completed at S-6 and the open sentence objectives had been mastered; however, three of the six verbal problem types (subt-

part part whole-addend, comparison, and subt-join-addend) for sentence-writing with numbers 0-20 had not been mastered after A-2 (see Buchanan & Romberg, 1982a). The sentence-writing objective is:

> Given an open problem situation involving the numbers 0-20 that is solvable by using either addition or subtraction, writes a sentence that represents the situation.

The noninstructional skills for problem-solving, recall of basic facts under a speeded test condition, and use of addition and subtraction algorithms under a free response timed condition were assessed throughout this phase of the achievement monitoring. Counting was not assessed after S-6. The 34 individual objectives assessed in grade 3 are marked with an asterisk in Figure 2 and are summarized in Table 2.[1]

Mastery expectations were established for the prerequisite and S and A instructional objectives. The numerousness, ordering, and place value objectives for the numbers 0-99 were to be mastered just before the first A topic; that is, mastery had been expected at the A-1 test time. Mastery of the sentence-writing objectives for numbers 0-20 had been anticipated after the completion of S-6 as explained above. It was anticipated that the three instructional objectives for addition and subtraction algorithms and sentence-writing for numbers 0-99 would be mastered upon completion of A-4.

---

[1] After the original specification of noninstructional objectives, it was decided to add 3-digit numbers (objectives) to the algorithm timed subtests and also to subdivide the timed test objectives according to criteria such as whether or not regrouping was required; therefore, the final number of objectives was > 34.

Table 2

Objectives Assessed in Grade 3

Numerousness
- writes 0-99
- represents 0-99

Ordering, Place Value
- ordering 0-99
- notation 0-99

Sentence-writing 0-20
- add-simple joining
- subt-simple separating
- subt-part part whole-addend
- add-part part whole
- subt-comparison
- subt-join-addend

Sentence-writing 0-99
- add-simple joining
- subt-simple separating
- subt-part part whole-addend
- add-part part whole
- subt-comparison
- subt-join-addend

Problem-solving 0-20
- add-simple joining
- subt-simple separating
- subt-part part whole-addend
- add-part-part-whole
- subt-comparison
- subt-join-addend

Problem-solving 0-99
- add-simple joining
- subt-simple separating
- subt-part part whole-addend
- add-part part whole
- subt-comparison
- subt-join-addend

Algorithms
- add 0-99
- subt 0-99

Basic Facts Recall--Speeded Tests
- add 0-20
- subt 0-20

Algorithms--Timed Test[a]
- add 0-99
- subt 0-99

[a] See footnote 1 on page 14.

There were no specific predictions for time of mastery for the non-instructional objectives; however, it was anticipated that performance on the recall and problem-solving skills for numbers 0-20 would be related to growth on the open sentence and sentence-writing 0-20 objectives. Similarly, it was presumed that problem-solving skills for numbers 0-99 and algorithmic performance under timed conditions would be related to status on the regular objectives of the A topics.

Description of the Tests

Three forms (U, V, W) of a 40-minute paper-and-pencil test were developed for the fall semester of grade 3 (and spring semester of grade 2); each form had six subtests. The major subtest contained 14 multiple-choice items covering all objectives to be assessed except for facts recall (speeded) and algorithms (timed). The second subtest measured performance on the sentence-writing 0-20 and 0-99 objectives in a free-response context. (These objectives were also included in the multiple-choice test.). Two subtests assessed recall of addition and subtraction facts under speeded test conditions. The final two subtests assessed addition and subtraction algorithm proficiency under timed conditions. Copies of the tests and administrator's manuals are in Appendix A; a discussion of the test development for all three years of the study appears elsewhere (Buchanan & Romberg, 1982b).

Multiple-choice subtest An outline of the content of each form of the multiple-choice subtest appears in Table 3. Each objective in the areas of numerousness, ordering/place value, and algorithms (not timed) was represented by one multiple-choice item on every test form; i.e., three items altogether per objective.

Table 3

Outline of Multiple-choice Subtest Items

| Item ID[a] | Form U | Form V | Form W |
|---|---|---|---|
| 1C | Numerousness writes 0-99 | Numerousness writes 0-99 | Numerousness writes 0-99 |
| 2D | Numerousness represents 0-99 | Numerousness represents 0-99 | Numerousness represents 0-99 |
| 3E | Problem-solving 0-20 (A) subt-simple separating 11-15 | Problem-solving 0-20 (A) subt-comparison 11-15 | Problem-solving 0-20 (A) add-part part whole 11-15 |
| 4F | Problem-solving 0-99 (A) subt-comparison 0-99 | Problem-solving 0-99 (A) add-part part whole 0-99 | Problem-solving 0-99 (A) subt-simple separating 0-99 |
| 5G | Problem-solving 0-20 (B) subt-join-addend 11-15 | Problem-solving 0-20 (B) subt-part part whole-addend 11-15 | Problem-solving 0-20 (B) add-simple joining 11-15 |
| 6H | Problem-solving 0-99 (B) add-simple joining 0-99 | Problem solving 0-99 (B) subt-join-addend 0-99 | Problem-solving 0-99 (B) subt-part part whole-addend 0-99 |
| 7I | Ordering, Place Value ordering 0-99 | Ordering, Place Value ordering 0-99 | Ordering, Place Value ordering 0-99 |
| 8J | Ordering, Place Value notation 0-99 | Ordering, Place Value notation 0-99 | Ordering, Place Value notation 0-99 |
| 9K | Sentence-writing 0-20 (A) add-part part whole 11-15 | Sentence-writing 0-20 (A) subt-simple separating 11-15 | Sentence-writing 0-20 (A) subt-comparison 11-15 |
| 10L | Sentence-writing 0-99 (A) subt-simple separating 0-99 | Sentence-writing 0-99 (A) subt-comparison 0-99 | Sentence-writing 0-99 (A) add-part part whole 0-99 |
| 11M | Sentence-writing 0-20 (B) subt-join-addend 11-15 | Sentence-writing 0-20 (B) subt-part part whole-addend 11-15 | Sentence-writing 0-20 (B) add-simple joining 11-15 |

continued

Table 3 (continued)

| Item ID[a] | Form U | Form V | Form W |
|---|---|---|---|
| 12N | Sentence-writing 0-99 (B)<br>subt-part part whole-addend 0-99 | Sentence-writing 0-99 (B)<br>add-simple joining 0-99 | Sentence-writing 0-99 (B)<br>subt-join-addend 0-99 |
| I30 | Algorithms<br>add 0-99 | Algorithms<br>add 0-99 | Algorithms<br>add 0-99 |
| 14P | Algorithms<br>subt 0-99 | Algorithms<br>subt 0-99 | Algorithms<br>subt 0-99 |

[a] The numeric ID refers to the items as they are labeled in the computer printout reproduced in Appendix B. The alpha ID refers to the actual tests; items A and B are samples (see Appendix A).

Each of the 12 individual objectives for sentence-writing 0-20 and 0-99 was represented by a multiple-choice item in one of three forms; that is, one item per objective. Each verbal problem type (e.g., joining) was therefore represented by two items, one for numbers 11-15 and one for 0-99. The two items were on different forms.

The sentence-writing objectives (or items) were further classified into two groups: Sets A and B. This was an arbitrary division created because half (Set A) of the items were designed to reflect the interview verbal problems precisely in syntax, number order, number domain, etc., while the remainder (Set B) allowed variations in these characteristics in keeping with the instructional program which presented more variations of each problem type than it was possible to cover in the individual interview.[2]

Since there was no way in a multiple-choice format to have students actually write a sentence, the items required listening to a verbal problem read aloud and then choosing the sentence which correctly represented the verbal situation. The problem situation itself was not printed on the test page. This prevented reading difficulties and also was in keeping with the procedures for the interviews in which the problems were presented orally. Another subtest, explained below, contained sentence-writing items in a free-response format.

The assignment of items to test forms for the 12 objectives for problem-solving 0-20 and 0-99 exactly paralleled the assignment of

[2] For both the sentence-writing and problem-solving objectives, Set A test verbal problems differed from interview verbal problems in that different nouns and verbs were used so that the students had a new context to consider.

sentence-writing items. That is, there was one item per objective assigned to one of the three forms. The two items total per verbal problem type--one for 0-20 and one for 0-99--were assigned to different forms. The problem-solving items, which were also in Set A or B, required the student to listen to the story, which was not printed in the test booklet, and to choose the correct solution.

All of the questions in the multiple-choice section of the teata were read to the children and then the key phrases were repeated; in the case of the verbal problems for the sentence-writing and problem-solving objectives, the entire story situation was read twice. The children then marked an X on one of the four responae choices; the aolution, two distractors, and the "puzzled face," an option which indicated "I have not learned this yet." The response choices, symbols, and picturea were not read or explained to the children (except for the "puzzled face").

The "puzzled face" option was provided to avoid unneceasary frustration and to reduce the amount of random guessing. Although it was expected that the "puzzled face" choice would be uaed throughout the achievement testing because there would alwaya be objectibes not yet introduced and/or maatered, this option was particularly useful for baseline asaessment such as for algorithms. Marking the "puzzled face" allowed children to give a positive responae indicating that they hadn't learned to find the answer to the quea-tion.

Sentence-writing free-response subtests. The 12 individual sentence-writing objectives (verbal problem types) for the numbers 0-20 and 0-99 were also assesaed in a free-response format in which a verbal problem was

read twice to the students who were directed to write a sentence for the situation and not solve the sentence. There were two 0-20 and two 0-99 items per form. All items were in Set A (see Table 4).

Speeded subtests. There were 12 addition and 12 subtraction facts on each of the three forms; the first six problems in each case covered the facts from 4 to 9; the last six involved 10 to 18 (see Table 5).

The addition and subtraction recall subtests were introduced by the test administrator; then specific directions on a tape recording preceded the items presented with intervals of 2 seconds' working time for both addition and subtraction. The intervals were based on previous studies in this area (Romberg, 1975). The children wrote their answers in designated spaces, leaving spaces for unknown facts empty. There was a short break between the two subtests.

Addition and subtraction algorithms timed subtests. These subtests each contained 24 items. The items were either 2-digit $\pm$ 2-digit or 3-digit $\pm$ 3-digit (or in a few cases, 2-digit $\pm$ 1-digit); 18 items required regrouping, 6 did not. The items were arranged in order of difficulty (see Table 6). For example, 3-digit problems not requiring regrouping preceded 3-digit problems which required regrouping and, for 3-digit regrouping problems, those in which only the ones were regrouped preceded those in which both ones and tens were regrouped. The students were instructed to try each problem in order (the problems were alphabetized) and to go on to the next problem is unable to do a particular example. Six minutes was allowed for each subtest.[3]

[3]The authors thank James Moser for his assistance in specifying item content and order.

Table 4

Outline of Sentence-writing Free Response Subtest Items

| Item ID[a] | Form U | Form V | Form W |
|---|---|---|---|
| 1A | Sentence-writing 0-20<br>subt-comparison 11-15 | Sentence-writing 0-20<br>add-part part whole 11-15 | Sentence-writing 0-20<br>subt-simple separating 11-15 |
| 2B | Sentence-writing 0-99<br>add-part part whole 0-99 | Sentence-writing 0-99<br>subt-simple separating 0-99 | Sentence-writing 0-99<br>subt-comparison 0-99 |
| 3C | Sentence-writing 0-99<br>subt-join-addend 0-99 | Sentence-writing 0-99<br>subt-part part whole-addend 0-99 | Sentence-writing 0-99<br>add-simple joining 0-99 |
| 4D | Sentence-writing 0-20<br>add-simple joining 11-15 | Sentence-writing 0-20<br>subt-join-addend 11-15 | Sentence-writing 0-20<br>subt-part part whole-addend 11-15 |

[a]The numeric ID refers to the items as they are labeled in the computer printout reproduced in Appendix B. The alpha ID refers to the actual tests (see Appendix A).

Table 5

Outline of Addition and Subtraction Facts

Recall Items--Speeded Subtests

| Item ID[a] | Form U | Form V | Form W |
|---|---|---|---|
| | Addition Facts Recall Subtests | | |
| 1C | 1 + 5 | 3 + 1 | 2 + 4 |
| 2D | 3 + 2 | 2 + 5 | 6 + 3 |
| 3E | 4 + 4 | 1 + 6 | 5 + 2 |
| 4F | 3 + 6 | 7 + 2 | 2 + 3 |
| 5G | 4 + 3 | 2 + 6 | 5 + 0 |
| 6H | 6 + 2 | 3 + 5 | 1 + 3 |
| 7I | 5 + 8 | 4 + 8 | 9 + 2 |
| 8J | 6 + 9 | 3 + 7 | 6 + 6 |
| 9K | 9 + 3 | 5 + 9 | 4 + 7 |
| 10L | 5 + 7 | 6 + 8 | 7 + 6 |
| 11M | 8 + 9 | 8 + 7 | 9 + 7 |
| 12N | 3 + 8 | 4 + 9 | 6 + 4 |
| | Subtraction Facts Recall Subtests | | |
| 1C | 5 - 1 | 7 - 1 | 3 - 2 |
| 2D | 9 - 2 | 8 - 4 | 6 - 4 |
| 3E | 8 - 7 | 9 - 5 | 9 - 1 |
| 4F | 5 - 3 | 7 - 4 | 7 - 3 |
| 5G | 7 - 6 | 8 - 6 | 6 - 1 |
| 6H | 8 - 5 | 4 - 3 | 7 - 5 |
| 7I | 14 - 7 | 11 - 2 | 10 - 4 |
| 8J | 12 - 5 | 13 - 8 | 13 - 9 |
| 9K | 11 - 8 | 12 - 7 | 14 - 8 |
| 10L | 13 - 7 | 15 - 9 | 11 - 7 |
| 11M | 12 - 9 | 10 - 2 | 12 - 4 |
| 12N | 15 - 8 | 16 - 7 | 17 - 9 |

[a]The numeric ID refers to the items as they are labeled in the computer printout repreduced in Appendix B. The alpha ID refers to the actual tests (see Appendix A).

Table 6

Item Content of Addition and Subtraction Algorithms Timed Subtests

Forms U, V, and W

| Type of Problem | Number of Items |
|---|---|
| **Addition Subtest** | |
| 2-digit without regrouping | 3 |
| 3-digit without regrouping | 3 |
| 2-digit + 1-digit with regrouping | 3 |
| 2-digit with regrouping | 3 |
| 3-digit with regrouping in ones | 3 |
| 3-digit with regrouping in tens | 3 |
| 3-digit with regrouping in ones and tens | 3 |
| 3 2-digit addends with regrouping | 3 |
| **Subtraction Subtest** | |
| 2-digit without regrouping | 3 |
| 3-digit without regrouping | 3 |
| 2-digit - 1-digit with regrouping | 3 |
| 2-digit with regrouping | 3 |
| 3-digit with regrouping in ones | 3 |
| 3-digit with regrouping in tens | 3 |
| 3-digit with regrouping in ones and tens | 3 |
| 3-digit with regrouping in ones and tens, zero(s) in minuend | 3 |

## Data Collection Procedures

### Test Groups

Following the matrix sampling plan described earlier, students in each class were randomly assigned to one of three test groups containing 11-12 students per group in school 3 and 25-26 per group in school 1. The test groups were assigned to one of the three test forms (U, V, W) according to the schedule in Table 7. Since there were two test times, each student took two of the three forms once. However, since forms U, V, and W were also used in grade 2 (spring), each student had taken one of the three forms previously. Certain items also appeared in the grade 1 and 2 (fall) test forms, so that students would have taken these items at least twice and in some cases three times before. Because of absences and student mobility, the number of students actually tested after each topic varied somewhat. Also, because the classes moved at different paces through the topics, particularly where there was homogeneous grouping, it was not always possible to test an entire test group at one sitting.

Table 7

Assignment of Students to Test Form

| Test Group | Administration Time | |
|---|---|---|
| | A-3 | A-4 |
| | Test Form Assignment | |
| 1 | U | W |
| 2 | V | U |
| 3 | W | V |

Schedule

The achievement monitoring tests were given as soon as possible after each topic was completed. Since instruction in Topic A-3 took about three weeks and was followed by an intervening DMP topic which was not a part of the study, there was a six week interval between administrations.

Procedure

The tests were administered by Center staff members in one 40 minute sitting during the regular mathematics class periods. The practice of having Center administrators provided uniformity in administration procedures, relieved the teachers from this responsibility, avoided later "teaching to the test," and freed the teacher to participate in interviews with other Center staff.

Since most students had already participated in nine similar test sittings in grades 1 and 2 (see Buchanan & Romberg, 1982a), there was little administrative difficulty in giving the tests. Students were familiar and comfortable with most administrators and the general procedure as well as the format and most items or item types. The algorithm timed subtests had not been administered until A-1. Perhaps because of their novelty, most students enjoyed the challenge of completing these subtests in the allotted time. However, in general the familiarity with the rest of the test had a negative effect since some students had become increasingly bored by the repetitive testing. The teachers were helpful in motivating the students but nonetheless some were test-weary.

As described previously, the multiple-choice questions were read aloud. Most children had little problem following along. Pacing the multiple-choice subtest was at the administrators' discretion, with the general policy being to move the test along by encouraging children who were pondering at length to "mark the puzzled face." Apparently because of this option, the children did not appear to be discouraged by the few items that they had not met in formal instruction at the time.

One problem occurred during the free-response sentence-writing subtest which may have negatively affected performance on certain items. Despite reminders, some students failed to listen to the entire verbal story before beginning to write the number sentence. Since the numbers in the written sentence must be reversed from their order in the story for the comparison and join-addend situations, errors resulted when students did not correct themselves after starting the sentence with the first number they heard.

The taped subtests could not be stopped once started; however, examination of the response spaces showed that almost all children kept their place well. Even though there was only 2 seconds' working time between items, students were able to count out answers on their fingers, so that the responses represent a mixture of facts actually committed to memory and "facts" determined during the test. Some children expressed enjoyment in doing the recall tests, but for some the pressure of a timed test was continually frustrating.

The algorithm timed tests were fairly enjoyable for most students. When unable to use the addition or subtraction algorithm correctly, they

were not deterred from completing the majority of the problems using an invented algorithm, usually "buggy."

## Results

### Scoring the Tests

Subtest statistics and item parameters for each form were computed for all subtests at each administration time using the LERTAP program (Nelson, 1974). Scores representing progress on the objectives were then created for each administration by combining in a single score across forms the proportion correct for all individual items related to that objective; similarly, scores for the composite objectives incorporated the scores for all objectives related to the same content area. Thus, rather than item difficulties, or p values, what might be called "objective difficulties" were calculated to represent group progress toward mastery of the objectives. Since under the matrix sampling plan most objectives were represented by items on at least two and usually all three forms, the "objective difficulties" at any one test time were less affected by possible bias in the random assignment of students to test group than the item and subtest statistics.

### Subtest and Item Statistics

Although the results by objective are of primary interest in the study, a brief report of the subtest and item results is offered first as background. The multiple-choice subtest was not developed as a standard norm-referenced measure but rather as a criterion-referenced test with each

item on any one form assessing mastery of a specific objective. Therefore, the total score on the subtest is an aggregate measure of performance on several objectives. Also, rather than the usual expectation that about half of the students would respond correctly to each item, it was expected that almost none, some, or almost all of the students might answer correctly depending on the status of instruction at the time of the test. Another factor affecting the subtest and item data for the multiple-choice subtest was guessing. The "puzzled face" or "I haven't learned this yet" option was offered to prevent random guessing but guessing still occurred. Another factor affecting the item and subtest analyses for all but the algorithm subtests was the relatively short test length. The small population of students tested was a factor affecting all analyses.

Tables 8-12 report the multiple-choice and recall subtest statistics for all forms and administration periods for the total population. Information included is the number of individuals tested, number of items, mean, standard deviation, highest and lowest score, Hoyt estimate of reliability, and the standard error of measurement. Since the sentence-writing subtest had only four items per form, subtest statistics are not reported.

The means and standard deviations indicate that the three forms were about equivalent in difficulty within each of the two administration periods. The reliabilities for the multiple-choice subtests ranged from .45 to .66 which is somewhat low but since the means were high and the tests were essentially criterion-referenced posttests, they are probably satisfactory. For the addition and subtraction recall subtests, the respective reliabilities ranged from .52 to .77 and .58 to .72. The reliabilities for the addition algorithm subtests ranged from .68 to .88 with the exception of Form U at A-4 for which the reliability was .51.

Table 8

Objectives Subtest Statistics for Forms U, V, and W

for Two Administration Times

| Administration Time | Form | Number of Individuals | Number of Items | Mean | S.D. | Highest Score | Lowest Score | Hoyt Est. r | S.E.M. |
|---|---|---|---|---|---|---|---|---|---|
| | U | 31 | 14 | 11.00 | 1.88 | 14 | 5 | .60 | 1.14 |
| A3 | V | 30 | 14 | 12.10 | 1.49 | 14 | 9 | .45 | 1.06 |
| | W | 29 | 14 | 11.55 | 1.48 | 14 | 8 | .46 | 1.04 |
| | U | 32 | 14 | 12.72 | 1.59 | 14 | 7 | .66 | .90 |
| A4 | V | 31 | 14 | 11.94 | 1.69 | 14 | 8 | .55 | 1.09 |
| | W | 31 | 14 | 11.97 | 1.72 | 14 | 8 | .60 | 1.05 |

Table 9

Addition Facts Recall - Speeded Subtest Statistics for Forms U, V, and W for Two Administration Times

| Administration Time | Form | Number of Individuals | Number of Items | Mean | S.D. | Highest Score | Lowest Score | Hoyt Est. r | S.E.M. |
|---|---|---|---|---|---|---|---|---|---|
| | U | 31 | 12 | 10.48 | 1.67 | 12 | 6 | .66 | .93 |
| A3 | V | 30 | 12 | 10.77 | 1.85 | 12 | 4 | .77 | .86 |
| | W | 29 | 12 | 11.48 | 1.09 | 12 | 8 | .66 | .61 |
| | U | 32 | 12 | 11.12 | 1.21 | 12 | 8 | .52 | .80 |
| A4 | V | 31 | 12 | 10.84 | 1.44 | 12 | 6 | .58 | .89 |
| | W | 31 | 12 | 11.55 | .96 | 12 | 8 | .62 | .57 |

Table 10

Subtraction Facts Recall - Speeded Subtest Statistics for Forms U, V, and W for Two Administration Times

| Administration Time | Form | Number of Individuals | Number of Items | Mean | S.D. | Highest Score | Lowest Score | Hoyt Est. r | S.E.M. |
|---|---|---|---|---|---|---|---|---|---|
| A3 | U | 31 | 12 | 9.94 | 1.82 | 12 | 5 | .62 | 1.07 |
| | V | 30 | 12 | 10.37 | 1.52 | 12 | 7 | .58 | .94 |
| | W | 29 | 12 | 9.97 | 2.03 | 12 | 4 | .72 | 1.03 |
| A4 | U | 32 | 12 | 10.72 | 1.55 | 12 | 7 | .65 | .88 |
| | V | 31 | 12 | 10.90 | 1.47 | 12 | 8 | .62 | .86 |
| | W | 31 | 12 | 10.65 | 1.60 | 12 | 6 | .62 | .94 |

Table 11

Addition Algorithms - Timed Subtest Statistics for

Forms U, V, and W for Two Administration Times

| Administration Time | Form | Number of Individuals | Number of Items | Mean | S.D. | Highest Score | Lowest Score | Hoyt Est. r | S.E.M. |
|---|---|---|---|---|---|---|---|---|---|
| A3 | U | 31 | 24 | 18.94 | 3.68 | 24 | 12 | .83 | 1.48 |
| | V | 30 | 24 | 18.47 | 4.46 | 24 | 6 | .87 | 1.56 |
| | W | 29 | 24 | 17.59 | 3.81 | 23 | 10 | .84 | 1.51 |
| A4 | U | 32 | 24 | 21.75 | 1.81 | 24 | 17 | .51 | 1.25 |
| | V | 31 | 24 | 19.32 | 4.38 | 24 | 7 | .88 | 1.50 |
| | W | 31 | 24 | 20.65 | 2.65 | 24 | 14 | .68 | 1.48 |

Table 12

Subtraction Algorithms - Timed Subtest Statistics for

Forms U, V, and W for Two Administration Times

| Administration Time | Form | Number of Individuals | Number of Items | Mean | S.D. | Highest Score | Lowest Score | Hoyt Est. r | S.E.M. |
|---|---|---|---|---|---|---|---|---|---|
| A3 | U | 31 | 24 | 12.00 | 4.91 | 22 | 4 | .89 | 1.61 |
| | V | 30 | 24 | 13.47 | 4.42 | 20 | 0 | .87 | 1.55 |
| | W | 29 | 24 | 11.79 | 5.49 | 21 | 1 | .92 | 1.53 |
| A4 | U | 32 | 24 | 16.06 | 3.97 | 22 | 6 | .85 | 1.52 |
| | V | 31 | 24 | 13.90 | 5.41 | 24 | 0 | .91 | 1.57 |
| | W | 31 | 24 | 14.45 | 5.18 | 23 | 6 | .91 | 1.48 |

The subtraction algorithm subtest reliabilities were .85 to .92. The algorithm subtests contained more items that were still difficult at A-3 and A-4 so that somewhat higher reliabilities than for the multiple-choice and recall subtests would be expected.

Item statistics for all subtests (including the sentence-writing subtest) for all forms and administration periods appear in Appendix B. The tables include the number and percentage of students selecting each response (the p-value or item difficulty), the point-biserial and bi-serial correlations with the subtest and the total test, and the average subtest and total test scores for individuals selecting the correct response.

For the multiple-choice subtest the p-values for 24 of the 42 items demonstrated an increase from A-2 to A-3, 10 remained constant (± 5%), and 8 decreased. (A-2 item data were reported in Buchanan & Romberg, 1982a and are discussed here to provide a point of reference for A-3 data.) Between A-3 and A-4 there was less room for growth. P-values for 15 items increased; 19 remained the same, and 8 decreased. Of the 42 items, 15 had p-values >90.0% at A-2; 13 of these p-values remained >90.0% at A-3. At A-3 there were a total of 22 items with p-values >90.0%; 19 stayed >90.0% at A-4. There were a total of 27 items with p-values >90.0% at A-4.

The multiple-choice items associated with the introduction of the subtraction algorithm showed the most interesting and dramatic changes in p-values. For example, p-values for item 14P in Form V which contained the problem $\frac{85}{-\ 59}$ increased from 3.2% at A-2 to 86.7% at A-3. The choice

of distractors is illuminating. At A-2 71.0% of the students chose the solution (34) resulting from a common "buggy" algorithm; at A-3 only 13.3% selected this distractor. At A-4 this high level of performance was maintained with a p-value of 90.3%. The other subtraction item requiring regrouping (item 14P in Form W) was also difficult at A-2 when the p-value was 36.7%. After the introduction of the algorithm at A-3, the p-value increased to 75.9% and thereafter to 80.6% (A-4). In this case the distractor usually chosen was 37, the result of applying the reverse operation. It was selected 46.7% of the time at A-2 and 17.2% at A-3. There were also notable increases in p-values for some of the sentence-writing and problem-solving items containing subtraction verbal problems for both numbers 0-20 and 0-99. These will be discussed in the section on results for the objectives.

The three multiple-choice items assessing notation 0-99 for the ordering/place value area were especially difficult. For example, successive p-values for item 8J in Form W were 36.7%, 10.3%, and 32.3%. These items required both regrouping (in order to rename numbers) and in two cases knowledge of DMP notation. Probably they did not appropriately reflect instruction which stressed simple recognition or naming of the place value of digits.

Some of the items for subtraction situations in the free-response sentence-writing subtest also exhibited substantial change in p-values from A-2 to A-3 to A-4. These p-values will be discussed in connection with the objective data.

P-values for the individual items (basic facts) in the two recall tests fell into two groups at A-1 and A-2 corresponding to the facts

with sums/minuends 4-9 and 10-18, or "easy" and "hard" facts. P-values for the "easy" facts for both addition and subtraction were ≥93.1% in all but one case; three-fifths of the time the p-values were 100.0%. There was more variation for the "hard" facts. The addition "hard" facts p-values ranged from 61.3% to 100.0% with most scores fairly evenly distributed in the 75-100% area. Subtraction "hard" facts had p-values very evenly distributed from 54.8% to 96.8%. P-values for most items improved steadily from S-6 to A-1 and A-2, except of course for those with very high initial values. These were maintained or changed negligibly. There was some effect of item position on p-values in the recall subtests, but this was not systematically examined since the items were randomly ordered and the aggregate scores for all items associated with the objective are of primary interest in the study.

The p-values for the algorithm subtests were related to item type and position in the test. Since the items were arranged in order of difficulty, some students were unable to do or never attempted items near the end of the test. For example, an early item (item 2C, Form V) for subtraction with two-digit numbers requiring no regrouping had p-values of 96.7% at A-3 and 96.8% at A-4. In contrast, a later three-digit subtraction regrouping item (item 19T in Form ) had successive p-values of 13.3% and 19.4%.

The biserial correlations (with the subtest) for the majority of items were adequate or better (≥.30) for the correct response and negative (≤-.20)for incorrect responses though there were some irregular biserials particularly for very easy items on which good students tended to be careless. The "puzzled face" option in the multiple-choice subtest

was used appropriately as indicated by the biserials for this response choice, which were almost always strongly negative. That is, children who chose this response for particular items also had low scores on the total subtest.

The nonseparating subtraction sentence-writing items for both 0-20 and 0-99 included one or two distractors which were addition sentences, most of which had been powerful distractors in preceding topics (see Buchanan & Romberg, 1982a). However, except for the subt-join-addend 0-20 item, item 11M in Form U, the attractiveness of these distractors receded considerably at the A-3 test time, perhaps due to the emphasis on subtraction problems in connection with the algorithm. For the exceptional item (see Table 13), the pattern was finally broken at A-4, though not completely. The power of the sentence-writing reverse operation distractor may be related to the tendency shown in the individual interviews to use additive strategies such as counting up from a given number or adding on with manipulatives in solving some subtraction verbal problems, particularly the comparison and subt-join-addend problems. See Anick, Buchanan, Carpenter, Moser, & Steinberg, 1981; Anick & Moser, 1980; Anick & Moser, 1981.

Progress on the Objectives

In this section the results of aggregating the item data to create scores representing progress on each objective will be discussed. The objective data ("objective difficulty") will be related to the instructional program the students experienced. The proportion correct for each individual objective and for the composite objectives for the total population at all administration times is reported in Table 14; results for each school and class appear in Appendix C. The A-1 and A-2 test

Table 13

Item Statistics for the Sentence-writing 0-20,

subt-join-addend (11-15) Item, Item 11M, Form U[a]

| Test Time | Response Choice | Proportion | Biserial Correlation | Mean Subtest Score |
|---|---|---|---|---|
| A-2 N=34 | (1) 8 - 6 = ☐ (includes solution) | 2.9 | -.59 | 8.00 |
| | (2) 14 + 8 = ☐ (reverse operation) | 52.9 | -.76 | 9.67 |
| | (3) 14 - 8 = ☐ (correct response) | 41.2 | .91 | 12.71 |
| | (4) puzzled face | 2.9 | -.18 | 10.00 |
| A-3 N=31 | (1) 8 - 6 = ☐ (includes solution | 6.5 | .28 | 12.00 |
| | (2) 14 + 8 = ☐ (reverse operation) | 58.1 | -.45 | 10.44 |
| | (3) 14 - 8 = ☐ (correct response) | 32.3 | .68 | 12.40 |
| | (4) puzzled face | 3.2 | -1.45 | 5.00 |
| A-4 N=32 | (1) 8 - 6 = ☐ (includes solution) | 6.3 | -.07 | 12.50 |
| | (2) 14 + 8 = ☐ (reverse operation) | 18.8 | -.76 | 11.00 |
| | (3) 14 - 8 = ☐ (correct response) | 71.9 | .85 | 13.35 |
| | (4) puzzled face | 3.1 | -1.06 | 9.00 |

[a]The item read: This number story is about a plant. Mark the number sentence that tells how to find the answer. A plant was 8 cubes tall. It grew some. Now it is 14 cubes tall. How much did it grow?

Table 14

Progress Toward Objectives Across Administration Times as Represented by Proportion of Items Answered Correctly for Total Population

| Description of Objectives | Number of Items | Results for Objectives[a] A-1 | A-2 | A-3 | A-4 | Number of Items | Results for Composite Objectives A-1 | A-2 | A-3 | A-4 |
|---|---|---|---|---|---|---|---|---|---|---|
| **Prerequisite Instructional Objectives** | | | | | | | | | | |
| Numerousness | | | | | | | | | | |
| writes 0-99 | 3 | 86.2 | 88.4 | 93.3 | 92.6 | | | | | |
| represents 0-99 | 3 | 88.3 | 94.7 | 92.2 | 96.8 | 6 | 87.2 | 91.6 | 92.8 | 94.7 |
| Ordering, Place Value | | | | | | | | | | |
| orders 0-99 | 3 | 89.4 | 83.2 | 86.7 | 97.9 | | | | | |
| notation 0-99 | 3 | 18.1 | 26.3 | 21.1 | 39.4 | 6 | 53.7 | 54.7 | 53.9 | 68.6 |
| **Instructional Objectives for S,A Topics** | | | | | | | | | | |
| Sentence-Writing 0-20 | | | | | | | | | | |
| add-simple joining (B) | 1 | 90.3 | 93.3 | 100.0 | 93.5 | | | | | |
| subt-simple separating (A) | 1 | 96.9 | 96.8 | 96.7 | 96.8 | | | | | |
| subt-part part whole-addend (B) | 1 | 75.0 | 54.8 | 90.0 | 83.9 | | | | | |
| add-part part whole (A) | 1 | 96.8 | 100.0 | 96.8 | 100.0 | | | | | |
| subt-comparison (A) | 1 | 71.0 | 70.0 | 86.2 | 83.9 | | | | | |
| subt-join-addend (B) | 1 | 51.6 | 41.2 | 32.3 | 71.9 | 6 | 80.3 | 75.8 | 83.3 | 88.3 |
| Sentence-Writing (Free Response)[b] | | | | | | | | | | |
| add-simple joining | 1 | 100.0 | 94.1 | 96.8 | 96.9 | | | | | |
| subt-simple separating | 1 | 96.8 | 93.3 | 100.0 | 100.0 | | | | | |
| subt-part part whole-addend | 1 | 80.6 | 66.7 | 82.8 | 90.3 | | | | | |
| add-part part whole | 1 | 96.9 | 100.0 | 100.0 | 100.0 | | | | | |
| subt-comparison | 1 | 51.6 | 52.9 | 58.1 | 87.5 | | | | | |
| subt-join-addend | 1 | 62.5 | 54.8 | 70.0 | 81.3 | 6 | 81.4 | 76.8 | 84.4 | 89.4 |

continued

Table 14 (continued)

| Description of Objectives | Number of Items | Results for Objectives A-1 | A-2 | A-3 | A-4 | Number of Items | Results for Composite Objectives A-1 | A-2 | A-3 | A-4 |
|---|---|---|---|---|---|---|---|---|---|---|
| Sentence-Writing 0-99 | | | | | | | | | | |
| add-simple joining (B) | 1 | 90.6 | 90.3 | 100.0 | 96.8 | | | | | |
| subt-simple separating (A) | 1 | 90.3 | 91.2 | 96.8 | 100.0 | | | | | |
| subt-part part whole-addend (B) | 1 | 74.2 | 73.5 | 77.4 | 90.6 | | | | | |
| add-part part whole (A) | 1 | 74.2 | 90.0 | 96.6 | 100.0 | | | | | |
| subt-comparison (A) | 1 | 46.9 | 38.7 | 86.7 | 74.2 | | | | | |
| subt-join-addend (B) | 1 | 41.9 | 46.7 | 62.1 | 67.7 | 6 | 69.7 | 72.1 | 86.7 | 88.3 |
| Sentence-Writing 0-99 (Free Response) | | | | | | | | | | |
| add-simple joining | 1 | 90.3 | 100.0 | 100.0 | 96.8 | | | | | |
| subt-simple separating | 1 | 100.0 | 90.3 | 96.7 | 100.0 | | | | | |
| subt-part part whole-addend | 1 | 78.1 | 64.5 | 93.3 | 96.8 | | | | | |
| add-part part whole | 1 | 100.0 | 94.1 | 96.8 | 96.9 | | | | | |
| subt-comparison | 1 | 35.5 | 46.7 | 79.3 | 77.4 | | | | | |
| subt-join-addend | 1 | 45.2 | 41.2 | 51.6 | 78.1 | 6 | 75.0 | 72.6 | 86.1 | 91.0 |
| Algorithms | | | | | | | | | | |
| add 0-99 | 3[c] | 48.9 | 86.3 | 93.3 | 97.9 | | | | | |
| subt 0-99 | 3[c] | 42.6 | 37.9 | 87.8 | 90.4 | 6 | 45.7 | 62.1 | 90.6 | 94.2 |
| Noninstructional Objectives | | | | | | | | | | |
| Problem-Solving 0-20 | | | | | | | | | | |
| add-simple joining (B) | 1 | 100.0 | 96.7 | 100.0 | 96.8 | | | | | |
| subt-simple separating (A) | 1 | 90.3 | 94.1 | 87.1 | 96.9 | | | | | |
| subt-part part whole-addend (B) | 1 | 78.1 | 77.4 | 100.0 | 90.3 | | | | | |
| add-part part whole (A) | 1 | 64.5 | 96.7 | 100.0 | 100.0 | | | | | |
| subt-comparison (A) | 1 | 59.4 | 77.4 | 86.7 | 93.5 | | | | | |
| subt-join-addend (B) | 1 | 90.3 | 94.1 | 80.6 | 93.8 | 6 | 80.3 | 89.5 | 92.2 | 95.2 |
| Problem-Solving 0-99 | | | | | | | | | | |
| add-simple joining (B) | 1 | 67.7 | 79.4 | 93.5 | 87.5 | | | | | |
| subt-simple separating (A) | 1 | 29.0 | 16.7 | 65.5 | 77.4 | | | | | |
| subt-part part whole-addend (B) | 1 | 29.0 | 13.3 | 69.0 | 74.2 | | | | | |
| add-part part whole (A) | 1[d] | 50.0 | 80.6 | 100.0 | 87.1 | | | | | |
| subt-comparison (A) | 1[d] | 67.7 | 76.5 | 58.1 | 84.4 | | | | | |
| subt-join-addend (B) | 1[d] | 65.6 | 71.0 | 80.0 | 77.4 | 6 | 51.6 | 57.4 | 77.8 | 81.4 |

continued

Table 14 (continued)

| Description of Objectives | Number of Items | Results for Objectives A-1 | A-2 | A-3 | A-4 | Number of Items | Results for Composite Objectives A-1 | A-2 | A-3 | A-4 |
|---|---|---|---|---|---|---|---|---|---|---|
| Recall of Basic Facts (Speeded Tests) | | | | | | | | | | |
| add 0-20 | | | | | | 36 | 79.7 | 80.7 | 90.8 | 93.1 |
| subt 0-20 | | | | | | 36 | 64.1 | 67.1 | 84.1 | 89.6 |
| Algorithms (Timed Tests) | | | | | | | | | | |
| add 2-digit, no regrouping | 9 | 90.4 | 94.7 | 96.7 | 97.2 | | | | | |
| add 2-digit, regrouping | 18 | 30.5 | 72.3 | 90.2 | 93.6 | 27 | 50.5 | 79.8 | 92.4 | 94.8 |
| add 3-digit, no regrouping | 9 | 86.5 | 86.0 | 97.4 | 97.2 | | | | | |
| add 3-digit, regrouping | 27 | 15.4 | 41.5 | 69.4 | 83.2 | 36 | 33.2 | 52.6 | 76.4 | 86.7 |
| 3 2-digit addends, regrouping | 9 | 3.9 | 18.6 | 28.9 | 55.0 | 9 | 3.9 | 18.6 | 28.9 | 55.0 |
| subt 2-digit, no regrouping | 9 | 86.2 | 81.4 | 93.7 | 96.5 | | | | | |
| subt 2-digit, regrouping | 18 | 7.8 | 7.4 | 68.9 | 80.7 | 27 | 33.9 | 32.0 | 77.2 | 85.9 |
| subt 3-digit, no regrouping | 9 | 74.1 | 75.4 | 93.0 | 95.4 | | | | | |
| subt 3-digic, regrouping | 36 | 1.0 | .7 | 22.4 | 35.2 | 45 | 15.6 | 15.6 | 36.5 | 47.2 |

Note. For those objectives for which there are three items, the number of subjects represented in the proportion correct at a particular test time is ascertained simply by summing the N's for the three forms; however, when there are more or less than three items, the N is increased or decreased by 29-34 subjects per item.

| | Number of Subjects | | | | |
|---|---|---|---|---|---|
| | | A-1 | A-2 | A-3 | A-4 |
| Form U | N = | 31 | 34 | 31 | 32 |
| Form V | N = | 32 | 31 | 30 | 31 |
| Form W | N = | 31 | 30 | 29 | 31 |

[a] A-1 and A-2 data were collected in the spring semester of Grade 2 and are included here to provide a frame of reference for the A-3 and A-4 data.

[b] Unless otherwide indicated, items were multiple choice.

[c] One of the three items did not require regrouping.

[d] This item did not require regrouping.

data which were gathered in the spring semester of grade 2 are included in Table 14 as points of reference for the discussion (see Buchanan & Romberg, 1982a). As noted previously, only the data for individual objectives are of interest here--data for the composite objectives were prepared for subsequent analyses.

The sentence-writing objectives for the S and A topics were not stated in terms of particular verbal problem types in the instructional materials, but for purposes of achievement monitoring each type was treated as an individual instructional objective. This was also true for the noninstructional problem-solving objectives. Since each verbal problem type is represented by only one item, "objective difficulty" is the same as a "p-value" or item difficulty and therefore the results for sentence-writing and problem-solving must be considered with caution. The algorithm 0-99 objectives also were stated in general terms in the instructional materials but were subdivided for assessment purposes according to whether or not regrouping was required. Again, this was true for the 0-999 algorithm objectives as well.

Numerousness; ordering, place value. Instruction on the four prerequisite instructional objectives related to the numbers 0-99 had occurred between the S-6 and A-1 test times. At A-1 and A-2 three of the four objectives had virtually been mastered.[4] Mastery (or near-mastery) status was maintained at A-3 and A-4 for the three objectives:

[4] A proportion correct ≥90% is the criterion for mastery. While it is recognized that not every student will have mastered the objective using this criterion, it allows for measurement error and assures that most students have reached mastery.

writes 0-99, represents 0-99, and orders 0-99. The fourth objective, notation 0-99, was assessed by items requiring students to apply the unique DMP notation in regrouping numbers; these items apparently were overly difficult and/or did not adequately reflect instruction which emphasized simple naming of numbers using the notation rather than regrouping (renaming) procedures. At A-3 and A-4 the scores for this objective were 21.1% and 39.4%, reflecting little substantial improvement from A-1 and A-2 (18.1%, 26.3%).

Mastery of the prerequisite objectives was considered necessary prior to work on the algorithms. Although performance on one objective was (or appeared to be) poor, it is unlikely that this affected algorithmic performance at all since the latter was excellent. Probably the high scores on the other three prerequisite objectives correctly reflected achievement.

Sentence-writing 0-20. The sentence-writing data in Table 14 are annotated by the labels described earlier, Sets A and B, according to whether or not item characteristics such as syntax corresponded to interview tasks. This distinction will be ignored here but may be useful in future analyses relating interview and achievement monitoring data.

The two addition and simple separating sentence-writing 0-20 objectives had been mastered at the beginning of grade 2 (test time S-4) and this status was maintained throughout grade 2 (to test time A-2). As expected, mastery level was continued in grade 3 at A-3 and A-4.

The other three subtraction objectives, the two addend and the comparison situations, had not been mastered at the end of grade 2

(A-2). Perhaps due to the emphasis on subtraction verbal problems in connection with the work on the subtraction algorithm in A-3 and A-4, there was overall and in some cases dramatic improvement from A-2 to A-4 on all three objectives in both the multiple-choice and free response test modes. Mastery was approached (and reached in one case) at A-4 for the subt-part part whole-addend and the comparison objectives for which A-2, A-3, and A-4 multiple-choice scores were, respectively, 54.8%, 90.0%, 83.9% and 70.0%, 86.2%, 83.9%. Similarly, successive free response scores for these two objectives were 66.7%, 82.8%, 90.3% and 52.9%, 58.1%, 87.5%. Although mastery level scores were not attained at A-4 for the subt-join-addend objective, there was growth in both test modes for this objective also; e.g., from 41.2% (A-2) to 71.9% (A-4) in the multiple choice context and from 54.8% (A-2) to 61.3% (A-4) in the free response context.

Mastery of all sentence-writing 0-20 objectives had been expected after the completion of the S topics in the fall semester of grade 2. A year later much improvement had been made on the more difficult subtraction objectives but they still had not been formally mastered by all students (except for the subt-part part whole-addend objective in the free response mode).

Sentence-writing 0-99. The pattern of performance for sentence-writing with larger numbers was somewhat similar to that for smaller numbers from A-2 to A-4. The two addition and subt-separating objectives had been mastered in both modes at A-2 (or earlier for some objectives/modes) and this status was maintained at A-3 and A-4. Probably due

to the instructional emphasis on subtraction sentences and algorithms, there was much improvement from A-2 to A-4 for the three remaining subtraction objectives, though only the subt-part part whole-addend objective was formally mastered at A-4. Scores for A-2, A-3, and A-4 for the multiple-choice and free response modes for this objective were, respectively, 73.5%, 77.4%, 90.6% and 64.5%, 93.3%, and 96.8%. Growth on the comparison and subt-join-addend objectives was striking for both test types. Successive scores were 38.7%, 86.7%, 74.2% (multiple-choice) and 46.7%, 79.3%, and 77.4% (free response) for the comparison objective. For the subt-join-addend objective, the multiple-choice scores were 46.7%, 62.1%, 67.7% and the free response scores were 41.2%, 51.6%, and 78.1%.

Mastery of all of these sentence types had been expected at A-4. However, since the comparable objectives for the numbers 0-20 had not been mastered, it is not too surprising that sentences with larger numbers also were not mastered for the comparison and subt-join-addend objectives. Because scores for the two test modes for the subt-part part whole-addend 0-99 objective were slightly higher than their counterparts for the 0-20 objective, the objective for the larger numbers could be said to be mastered in both modes whereas the comparable objective for smaller numbers was mastered only in the free response mode.

Algorithms. The three multiple-choice items for each algorithm objective (addition, subtraction) provided a brief summary assessment of algorithmic skill with a small sample of problem types. (The timed

algorithm tests, discussed below, provided a comprehensive and free response measure of algorithmic skill.) One of the three items in each case did not require regrouping, i.e., $\begin{array}{r} 53 \\ +\ 44 \end{array}$, $\begin{array}{r} 67 \\ -\ 42 \end{array}$. One of the two items which required regrouping also could readily be solved by counting; i.e., $\begin{array}{r} 16 \\ +\ 44 \end{array}$, $\begin{array}{r} 32 \\ -\ 5 \end{array}$. The third item was a standard regrouping problem, i.e , $\begin{array}{r} 29 \\ +\ 64 \end{array}$, $\begin{array}{r} 85 \\ -\ 59 \end{array}$.

The test results clearly mirror instruction. After the introduction of addition algorithm at A-2, students did very well on this objective (86.3%) and further practice at A-3 and A-4 seemed to enhance performance which improved to 93.3% and 97.9%.

The subtraction algorithm had not been covered at A-2 which status (37.9%) on the objective indicated. After introductory instruction during A-3, there was striking growth to 87.8% and 90.4% at A-4. Students obviously grasped the algorithm and were able to apply it in the multiple-choice context.

Problem-solving 0-20. The problem solving items required the child to select the correct answer for the verbal situations. Again the data in Table 14 are labeled for Sets A and B though this distinction is not of interest here. Only the subt-part part whole-addend and comparison problem-solving 0-20 objectives had not been mastered at the end of grade 2 (A-2): scores for both were 77.4% at that time. At A-3 mastery status was reached for the addend objective (100.0%) and approached for the comparison objective (86.7%). Both had been mastered at A-4 (90.3%, 93.5%) though the addend score dropped somewhat. Scores for the other four objectives remained at or near mastery at A-3 and A-4,

with the exception of a score of 80.6% at A-3 for the subt-join-addend objective. It is interesting that while two of the three nonseparating subtraction sentence-writing 0-20 objectives had not been mastered at A-4 (though scores were fairly high) the parallel problem-solving 0-20 objectives had been achieved.

Problem-solving 0-99. It is difficult to compare performance on the six problem-solving 0-99 objectives as a group because the items for two of the objectives did not require regrouping--the subt-comparison and subt-join-addend items--so these objectives were no doubt relatively less difficult than they might have been. For the two objectives with items not requiring regrouping, there was slight improvement from A-2 to A-4 though not to mastery status. The A-2 and A-4 scores for the comparison and subt-join-addend objectives were, respectively, 76.5% and 84.4%, and, 71.0% and 77.4%.

Probably due to instruction in the addition algorithm, performance at A-2 on the two addition objectives was relatively high (79.4% for simple joining and 80.6% for part part whole) and reached mastery level at A-3 (93.5%, 100.0%). Scores decreased slightly at A-4 (87.5%, 87.1%) but it can be safely concluded that these objectives were mastered.

Algorithm instruction for subtraction at A-3 undoubtedly influenced performance on the subt-simple separating and subt-part part whole-addend objectives for which scores made striking increases from A-2 to A-3 and then modest continued growth at A-4. For the separating objective, the scores were 16.7%, 65.5% and 77.4%; for the addend objective, they were 13.3%, 69.0% and 74.2%.

As for numbers 0-20, performance on the sentence-writing 0-99 objectives not yet mastered (comparison, subt-join-addend) was generally less adequate than that on the comparable problem-solving objectives though, interestingly, the difference was not as marked. Also, for the 0-20 objectives, the subt-join-addend situation showed the clearest discrepancy between sentence-writing and problem-solving skill while for the 0-99 objectives it was the comparison situation.

Recall of addition and subtraction facts (speeded tests). Increasing the speed with which students could respond to open sentences (basic facts) was not a formally stated objective of instruction for the A topics. However, it was anticipated that in the course of instruction teachers would employ standard techniques for facts recall such as flash cards drills to varying degrees. This practice plus use of the facts within two-digit computation was expected to produce improved facility in recall.

Students had apparently reached a plateau in performance in the latter half of grade 2 when S-6, A-1, and A-2 test scores for addition and subtraction facts recall under speeded conditions were, respectively, 79.1%, 79.7% and 80.7% (add), and, 65.3%, 64.1% and 67.1% (subt). Due perhaps to a combination of maturity, formal practice on the facts, and informal practice during algorithm work, scores improved in grade 3 for both addition and subtraction at A-3 to 90.8% and 84.1% and thereafter, at A-4, to 93.1% and 89.6%. Thus, these objectives had been essentially mastered at midyear in grade 3.

Algorithms (timed tests). Although the algorithm objectives as assessed under timed conditions were somewhat arbitrarily classified as noninstructional objectives, these tests were essentially a free-

response measure of the regular, instructional algorithm objectives for the numbers 0-99, particularly since so many students completed all items. The timed tests also included 3-digit numbers (algorithms) which were not covered in instruction; in this case the classification is more relevant.

In Table 14 the results for the addition and subtraction algorithm objectives are reported separately for regrouping and nonregrouping problems for the numbers 0-99 and 0-999. A further breakdown of the data by problem type (e.g., 3-digit + 3-digit with regrouping in tens only) will be given later.

At the end of grade 2 (A-2) status on the four nonregrouping algorithm objectives (add 2-digit, add 3-digit, subt 2-dgit, subt 3-digit) was already quite high (respectively, 94.7%, 86.0%, 81.4%, and 75.3%). Mastery was reached at A-3 and maintained at A-4 for these objectives; A-4 scores were excellent (97.2%, 97.2%, 96.5%, 95.4%) indicating a high degree of computational accuracy.

The addition algorithm with 2-digit numbers was introduced in A-2 and reviewed in A-3 and A-4. Progress was steady from A-2 to A-3 to A-4 (72.3%, 90.2%, and 93.6%) and mastery was attained as specified by the program. Although addition with 3-digit numbers was not an objective, students were able to generalize the use of the algorithm and at A-4 the scores for 3-digit addition with regrouping approached mastery (83.2%). (It is probable, however, that some students and/or teachers formally or informally worked on 3-digit computation.) Little progress was made on problems with three addends until this type of problem was introduced in A-4.

The subtraction algorithm with 2-digit numbers was introduced at A-3 as reflected dramatically in the growth on the 2-digit subtraction with regrouping objective from 7.4% at A-2 to 68.9% at A-3. Further progress, to 80.7%, occurred at A-4 though anticipated mastery status was not gained. Some transfer to 3-digit numbers was evident, but much less than for addition. The 3-digit subtraction with regrouping scores were .7%, 22.4%, and 35.2% for A-2, A-3, and A-4.

In Table 15 the results for all addition and subtraction problem types are reported individually. Also, this table presents data on proportion of items attempted for each item type and the proportion correct of those attempted. The 2-digit problem types were administered in the order in which they appear in the tables; similarly the 3-digit problems were given in that order. However, the 3-digit nonregrouping problems appeared between the 2-digit nonregrouping and the 2-digit ± 1-digit problems on the tests themselves (see Table 6).

Examination of the first and third columns of data in Table 15 reveals some interesting results about the relative difficulty of item types. First, it indicates that 2-digit ± 1-digit with regrouping problems for both addition and subtraction tended to be more difficult than the standard 2-digit ± 2-digit regrouping problems, even though the problems involving 1-digit numbers could conceivably have been solved simply by counting. Secondly, it appears that the generalization from 2-digit to 3-digit numbers for the addition algorithm was more pronounced for problems involving regrouping of tens than for those with regrouping of ones since the tens problems were generally

Table 15

Relationship Between Items Attempted and Items Answered Correctly

for the Algorithm Timed Tests

| Type of Problem | % Correct of Total[a] | | | | % Attempted of Total | | | | % Correct of Attempts | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | A-1 | A-2 | A-3 | A-4 | A-1 | A-2 | A-3 | A-4 | A-1 | A-2 | A-3 | A-4 |
| **Addition** | | | | | | | | | | | | |
| 2-digit without regrouping | 90.4 | 94.7 | 96.7 | 97.2 | 97.9 | 97.5 | 100.0 | 100.0 | 92.5 | 96.5 | 96.7 | 97.2 |
| 2-digit + 1-digit with regrouping | 21.3 | 63.5 | 85.9 | 91.8 | 81.9 | 86.7 | 97.0 | 99.3 | 27.2 | 72.4 | 88.8 | 92.6 |
| 2-digit with regrouping | 39.7 | 81.0 | 94.4 | 95.4 | 89.0 | 92.6 | 99.3 | 99.7 | 43.1 | 84.4 | 95.2 | 95.4 |
| 3-digit without regrouping[b] | 86.5 | 86.0 | 97.4 | 97.2 | 92.6 | 93.7 | 100.0 | 99.7 | 93.6 | 91.1 | 97.4 | 97.5 |
| 3-digit with regrouping in ones | 18.8 | 41.4 | 73.3 | 86.2 | 78.0 | 82.1 | 98.5 | 97.2 | 22.5 | 50.4 | 74.3 | 88.4 |
| 3-digit with regrouping in tens | 17.7 | 55.1 | 82.6 | 89.0 | 62.1 | 77.5 | 96.3 | 96.8 | 27.0 | 70.1 | 85.8 | 91.9 |
| 3-digit with regrouping in ones and tens | 9.6 | 28.1 | 52.2 | 74.5 | 43.3 | 64.6 | 86.7 | 94.0 | 24.0 | 40.2 | 56.9 | 79.5 |
| 3 2-digit addends with regrouping | 3.9 | 18.6 | 28.9 | 55.0 | 20.6 | 35.4 | 57.0 | 81.6 | 15.3 | 48.7 | 48.4 | 66.1 |
| **Subtraction** | | | | | | | | | | | | |
| 2-digit without regrouping | 86.2 | 81.4 | 93.7 | 96.5 | 96.1 | 95.4 | 100.0 | 100.0 | 88.9 | 84.8 | 95.7 | 96.5 |
| 2-digit - 1-digit with regrouping | 2.5 | 2.8 | 70.0 | 79.1 | 51.6 | 79.0 | 95.6 | 96.1 | 2.8 | 3.4 | 73.0 | 81.7 |
| 2-digit with regrouping | 13.1 | 11.9 | 67.8 | 82.3 | 82.6 | 83.2 | 97.4 | 98.9 | 16.1 | 15.3 | 70.0 | 83.2 |
| 3-digit without regrouping[b] | 74.1 | 75.4 | 93.0 | 95.4 | 84.4 | 87.0 | 99.6 | 99.3 | 88.1 | 85.5 | 93.3 | 95.4 |
| 3-digit with regrouping in ones | 2.5 | 1.4 | 41.9 | 57.1 | 67.7 | 63.9 | 82.6 | 91.1 | 3.3 | 2.0 | 49.6 | 62.4 |
| 3-digit with regrouping in tens | .7 | .7 | 33.7 | 56.0 | 57.4 | 54.0 | 74.1 | 85.5 | 1.1 | 1.1 | 45.1 | 64.7 |
| 3-digit with regrouping in ones and tens | .7 | .7 | 10.7 | 19.5 | 41.1 | 41.4 | 51.8 | 63.8 | 1.5 | 2.2 | 21.8 | 28.3 |
| 3-digit with regrouping, zero(s) in minuend | 0 | 0 | 3.3 | 8.2 | 33.3 | 32.6 | 41.1 | 50.3 | 0 | 0 | 11.0 | 17.3 |

[a] A-1 and A-2 data were collected in the spring semester of Grade 2 and are included here to provide a frame of reference for the A-3 and A-4 data.

[b] In the tests themselves these items appeared just after the 2-digit without regrouping items.

Note. There were 9 items for each problem type.

easier. This tendency did not occur for subtraction. In general, the relative difficulties appeared to correspond to the predicted order, that is, the order in which the test items were administered.

A time limit of 6 minutes was established for each subtest. Therefore, scores representing percent correct for item types occurring later in the test might have been artificially deflated if few or no students ever reached these items, or if only the less capable students reached them by hurrying through the test, perhaps by applying quick but "buggy" algorithms. Further, if only the more capable students attempted the later items, and it is assumed that the less able students might have done them correctly had they had time to try them, then the scores also might not be an accurate reflection of progress. Of course, it is possible that both the most and the least capable students attempted these problems but for different reasons.

The question is more or less moot for all 2-digit problem types (except the 3 addends) and for the 3-digit nonregrouping problems since the second column of data indicates that 79% or more of these items were attempted at A-1 and A-2 and 95% or more at A-3 and A-4. For these problem types the percent correct scores probably quite adequately reflect the status of the group. This means that the aggregate data for these objectives in Table 14 can also be viewed with confidence. For the 3-digit with regrouping problem types, from 43.3% to 82.1% of the addition problems were attempted at A-1 and A-2 and 86.7% to 98.5% at A-3 and A-4. From 32.6% to 67.7% of the subtraction problems were tried at A-1 and A-2, and from 41.1%

to 91.1% at A-3 and A-4. For some of these problem types the data in Table 15 and Table 14 as well may not fully represent the population but are probably a fairly accurate portrayal, especially if we assume that usually the more capable rather than the less capable students moved through the test faster and that the less capable students would not have done well on the later items.

In summary, at the close of the study, the 2-digit addition algorithm had been mastered as specified by the program and mastery was approached but not obtained for the 2-digit subtraction algorithm, contrary to the expectations of the program. It may be that the relatively short amount of time spent on A-4 contributed to the somewhat inadequate performance on the subtraction algorithm. Even though 3-digit algorithms were not covered in instruction, there was considerable generalization to these skills, even to a mastery level in the case of addition with regrouping and for both addition and subtraction without regrouping.

## Conclusion

In general, the results for the A-3 and A-4 test times reflected the instructional program. That is, dramatic improvement approaching mastery level occurred for the subtraction algorithm with 2-digit numbers. The addition algorithm for 2-digit numbers was mastered as was computation not requiring regrouping for both addition and subtraction of 2-digit numbers. This pattern of growth extended to 3-digit numbers for many problem types even though no formal instruction had been given on them.

There was considerable progress on the problem-solving 0-99 objectives, particularly those involving the subtraction algorithm, though none were actually mastered. There was marked improvement on the three

subtraction sentence-writing objectives not mastered at A-2, and one of these objectives (subt-part part whole-addend) was mastered in both the free response and multiple choice modes.

Although the sentence-writing 0-20 and problem solving 0-20 objectives were not included in instruction during this period, substantial gains were made on the objectives not previously mastered. At A-4 mastery of the two problem-solving 0-20 objectives (subt-part part whole-addend and subt-comparison) not attained at A-2 was reached. Scores for the two comparable sentence-writing 0-20 objectives were virtually at mastery level at A-4; however, the subt-join-addend objective for sentence-writing 0-20 remained difficult. Although students could solve problems of this nature, they still could not produce the corresponding sentence at A-4 in some cases. The recall objectives for addition and subtraction basic facts were mastered. Mastery of the prerequisite objectives for the numbers 0-99 was maintained for the three objectives previously mastered. The fourth objective was never reached and was judged inappropriate for the study.

## References


Anick, C. M., Buchanan, A. E., Carpenter, T. P., Moser, J. M., & Steinberg, R. M. Results from third and fourth individual interviews (September 1980 and January 1981) of the second phase of the longitudinal study (Working Paper No. 311). Madison: Wisconsin Center for Education Research, 1981.

Anick, C. M., & Moser, J. M. Results from seventh individual interview (September 1980), coordinated study #1 (Working Paper No. 303). Madison: Wisconsin Center for Education Research, 1980.

Anick, C. M., & Moser, J. M. Results from eighth individual interview (January 1981), coordinated study #1 (Working Paper No. 313). Madison: Wisconsin Center for Education Research, 1981.

Buchanan, A. E., & Romberg, T. A. Data collection procedures and descriptive statistics for the grade two (spring) achievement monitoring tests (A-1 and A-2), coordinated study #1 (Working Paper No. 320). Madison: Wisconsin Center for Education Research, 1982. (a)

Buchanan, A. E., & Romberg, T. A. Instrumentation for the achievement monitoring component of coordinated study #1 (Working Paper No. 322). Madison: Wisconsin Center for Education Research, 1982. (b)

Nelson, L. R. LERTAP. University of Otago, Duneden, New Zealand, 1974.

Romberg, T. A. Four studies on aspects of assessing computational performance (Technical Report No. 297). Madison: Wisconsin Center for Education Research, 1975.

Romberg, T. A., & Braswell, J. Achievement monitoring via item-sampling: A practical data gathering procedure for formative evaluation. Journal for Research in Mathematics Education, 1973, 4, 267-270.

Romberg, T. A., Harvey, J. G., Moser, J. M., & Montgomery, M. E. Developing mathematical processes. Chicago: Rand McNally & Co., 1974.

Appendix A

ADMINISTRATOR'S MANUALS AND STUDENT TESTS

FORMS U, V, W

U

Directions for Administering Achievement Monitoring Test 0

Coordinated Study #1 & #2

General Directions

Reading the Test. The first part of this test is in multiple choice format and is read aloud to the children. Read the questions exactly as they are printed in the directions; do not paraphrase. Each question is read twice--or the key phrases are repeated after the original question is read. Read the questions at a conversational pace. The second part of the test involves verbal problems for which the child must write, but not solve, a number sentence. Again, you will read the number story twice. The third part of the test is timed and assesses the child's speed and accuracy using the addition and subtraction algorithms. The fourth segment, the basic facts speed test, is administered via tape.

Since many children will not know how to do the majority of the test, especially at the beginning of the year, they will no doubt want to ask questions or want you to repeat items yet again. Please do not allow this--instead, ask them to answer "as best they can" or to mark the "puzzled face" to show they have "not learned this yet." Note also that reading the answers to the children is not permitted.

Since this is a group-administered test, verbal exchanges with individual children can be distracting and interfering--try to establish a policy of not talking and not allowing the children to talk in between questions.

Should the above directions seem unnecessarily stringent, please realize that we are attempting to measure change over time and that we have very few questions on which to base this measurement. The children will take the other forms of this same test at 6 week intervals and then they will repeat the three forms; hopefully each time they will be able to answer the questions more successfully.

Make sure the children mark only one box and that they mark at least one box. Encourage them to use the "puzzled face" by reminding them that this response means "I haven't learned this (how to do this) yet."

Pacing the Test. Try to keep the test moving. Expecially for the number story and algorithm problems it may take a "long" time for the children to figure out an answer. As a rule of thumb, allow the group to work on each question until only one or two children are still working. At that point, if necessary, suggest that anyone still working mark the "puzzled face" box. Then just go on to the next question without waiting longer. The second part of the test, sentence writing, may go slowly. Remind the children

not to solve the problem. The third part of the test is timed and must be administered accordingly.

The last section, the taped basic facts, is a speed test. Once the tape is started, it will not be stopped.

Estimated Administration Times

| | |
|---|---|
| Part 1 | 10 min. |
| Part 2 | 5 min. |
| Part 3 | 15 min. |
| Part 4 | 5 min. |

Preparations for Testing

The children will need two pencils with erasers. They will not need scratch paper for this test, since they will write in the "arrow" space. The children's names have been written on the tests in advance; distribute the tests, making sure each child has his/her own test.

Specific Directions

SAY: Today we are going to do some work with numbers in this booklet. You learned how to do some parts of the work last year in first grade. You will learn how to do more of the work this year in second grade. We don't expect you to know how to do all of the work today. We will come back again and again while you are in second grade . . . each time you will have learned how to do more of the work.

Find your name on the line. Look at the big box with an X in it--you will answer the questions today by making a big X like this one.

EXAMPLE A Now find row A. I am going to ask you a question. You will answer by making a big X in one of the boxes. If you haven't learned about the answer yet, make an X in the last box, the one with the puzzled face. [*Pause.*]

Which box has a circle cut into 4 pieces? Make an X on the box with a circle cut into four pieces. [*Pause.*] If you haven't learned this yet, make an X on the box with the puzzled face. [*Check to see that the children mark only one box in the row.*]

EXAMPLE B Look at the bats and balls in the arrow. Are there more bats, more balls, or the same number? Make an X on the box that tells whether there are more bats, more balls, or the same number.

Now turn to the next page and fold your booklet.

*[Note: Starting with row C, do not assist the children with the test, except to make sure they are marking only one box . . . and at least one box.]*

C Find row C. Look at the apples in the arrow. Make an X in the box that tells how many apples there are ... how many apples there are. *[Pause.]* Remember, if you haven't learned about this yet, mark the puzzled face.

D Row D. Look at the number in the arrow. Make an X in the box which has that many marbles in it ... that many marbles in it.

E Row E. I am going to read a number story about pencils. I will read the story twice. Listen both times before you mark a box. John had 12 pencils. He gave 7 pencils to Tim. How many pencils did John have left? *[Repeat. Allow time for the children to figure out their answers to rows E-H.]*

F Row F. This number story is about collections of cans. For this story, you may write on the paper if you want to. Debbie has 32 cans in her collection. Her brother Bob has 56 cans. How many more cans does Bob have than Debbie? *[Repeat and give "puzzled face" reminder, if necessary, to move the test along. Also remind them to make an X on their answer, if necessary.]*

G Row G. This number story is about bricks. Mr. Brown needs 11 bricks. He has 8 bricks already. How many more bricks should he get? *[Repeat.]*

H Row H. This number story is about books. For this story, you may write on the paper if you want to. The library had 54 books about animals. Then the librarian bought 18 more animal books. How many animal books does the library have now? *[Repeat, use "puzzled face" and "make an X" reminders as necessary.]*

Turn to the next page.

I Row I. Look at the numbers in the arrow. They are in order from smallest to largest. What number goes on the line ... what number goes on the line?

J Row J. Look at the number in the arrow. Make an X on the box that has has another name for the number ... another name for the number..

K Row K. Look at the number sentences. One of the number sentences tells how to find the answer for this story about cards. After I read the story, make an X on the number sentence that tells how to find the answer. Bill has 4 football cards. He also has 9 baseball cards. How many cards does Bill have altogether? *[Repeat.]*

L Row L. This number story is about candies. Make an X on the number sentence that tells how to find the answer. Kathy had 78 candies. She gave 35 candies to Jim. How many candies did Kathy have left? *[Repeat.]*

M Row M. This numb story is about a plant. A plant was 8 cubes tall. It grew some. Now is 14 cubes tall. How much did it grow? *[Repeat.]*

N Row N. This number story is about trees. Mark the number sentence that tells how to find the answer. Mrs. Turner had 67 trees. 29 trees were pine trees and the rest were oak trees. How many trees were oak trees? [*Repeat.*]

Turn to the next page.

O Row O. Look at the problem in the arrow. What number is the answer ... what number is the answer? [*Mention "write on paper" reminder*]

P Row P. Look at the problem in the arrow. What number is the answer ... what number is the answer?

Now we will do some different work. I will read a number story to you. Then I want you to write a number sentence for the story. You don't need to solve the sentence. Just write the sentence the best you can without solving it. Write it on the line.

STORY A Joe has 9 whistles. His sister Debra has 15 whistles. How many more whistles does Debra have than Joe? [*Repeat.*]

STORY B Mike has 48 red leaves. He has 26 yellow leaves. How many leaves does Mike have altogether? [*Repeat.*]

STORY C Jill has 29 nails. How many more nails does she have to put with them so she has 37 nails altogether? [*Repeat.*]

STORY D Jerry had 6 apples. His mother gave him 8 more apples. How many apples did Jerry have altogether? [*Repeat.*]

[*Give the children a short stand up-stretch-touch toes--and so on--"break" here.*]

Turn to the next page, the one that says "ADD" at the top.

Be sure you have the page that says "ADD" on it. All the problems on this page are addition problems. Each problem has a letter by it ... A, B, C, D... all the way to V, W and X. When I say "GO". start with problem A, then do B, then C, and so on until I say "STOP!" If you can't do a problem, go on to the next one. Do as many problems as you can before I say "STOP!" Ready? GO! (Allow 6 minutes) STOP! You worked very hard on these problems. You will be learning how to do them faster. (Reassure the children as you see fit.) Now turn to the page that says "SUBTRACT."

Be sure you have the page that says "SUBTRACT." All the problems on this page are subtraction. When I say "GO," start with problem A, then do B, then C... do as many as you can before I say "STOP!" Ready? GO! (Allow 6 minutes.) I could tell you tried your best on these problems. You will be learning how to do them faster.

Now turn to the last page.

The work on this page is different. I want to see how quickly you can think of the answers for addition and subtraction problems.

I am going to play a tape--the voice on the tape will say problems, like this: [*Play the four sample problems 2 + 8, 5 + 6, 7 + 4, 8 + 3.*] The problems will go very quickly, even faster than when you were in first grade. Today you probably will not know very many answers, but when I come back and we do these problems again, you will know more. Don't feel bad if you don't know the answers today.

We will start with the row of boxes at the top of the page--the ones with capital letters A, B, C .... The voice on the tape will tell you where to write your answers. Do your best to keep up with the voice. Get your pencil ready. [*Start tape.*]

Script on Tape: Look at the row of boxes at the top of the page. Find box A. I am going to say problems like 5 + 4. The answer for 5 + 4 is 9. So there is a 9 in box A. Find Box B. What is 7 + 1? 7 + 1 is 8. You write an 8 in box B.

[*10-second pause; make sure the children are working on the top row.*]

Now I am going to say problems for all the rest of the boxes in the top row. I will not stop, so write your answers quickly. If you can't think of an answer, just leave the box empty. Ready?

Form U

Box C 1 + 5

Box D 3 + 2

Box E 4 + 4

Box F 3 + 6

Box G 4 + 3

Box H 6 + 2

Box I 5 + 8

Box J 6 + 9

Box K 9 + 3

Box L 5 + 7

Box M 8 + 9

Box N 3 + 8

Stop working. You may rest for a moment...then we will work on the bottom row.

[*10 second pause*]

Ready to listen again? Look at the bottom row of boxes. Find Box A. This time I am going to say problems like 9 - 6. The answer for 9 - 6 is 3. So there is a 3 in box A. Find box B. What is 4 - 2? 4 - 2 is 2. You write a 2 in box B.

[*10 second pause--make sure the children are in the bottom row.*]

Now I am going to say problems for the rest of the boxes. I will not stop, so write your answers quickly, If you can't think of an answer, leave the box empty. Ready?

Form U

Box C 5 - 1

Box D 9 - 2

Box E 8 - 7

Box F 5 - 3

Box G 7 - 6

Box H 8 - 5

Box I 14 - 7

Box J 12 - 5

Box K 11 - 8

Box L 13 - 7

Box M 12 - 9

Box N 15 - 8

Stop working. Put your pencil down.

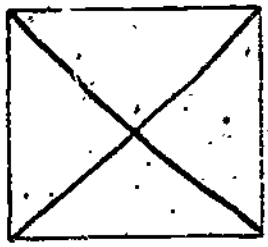
[*Stop the tape.*]

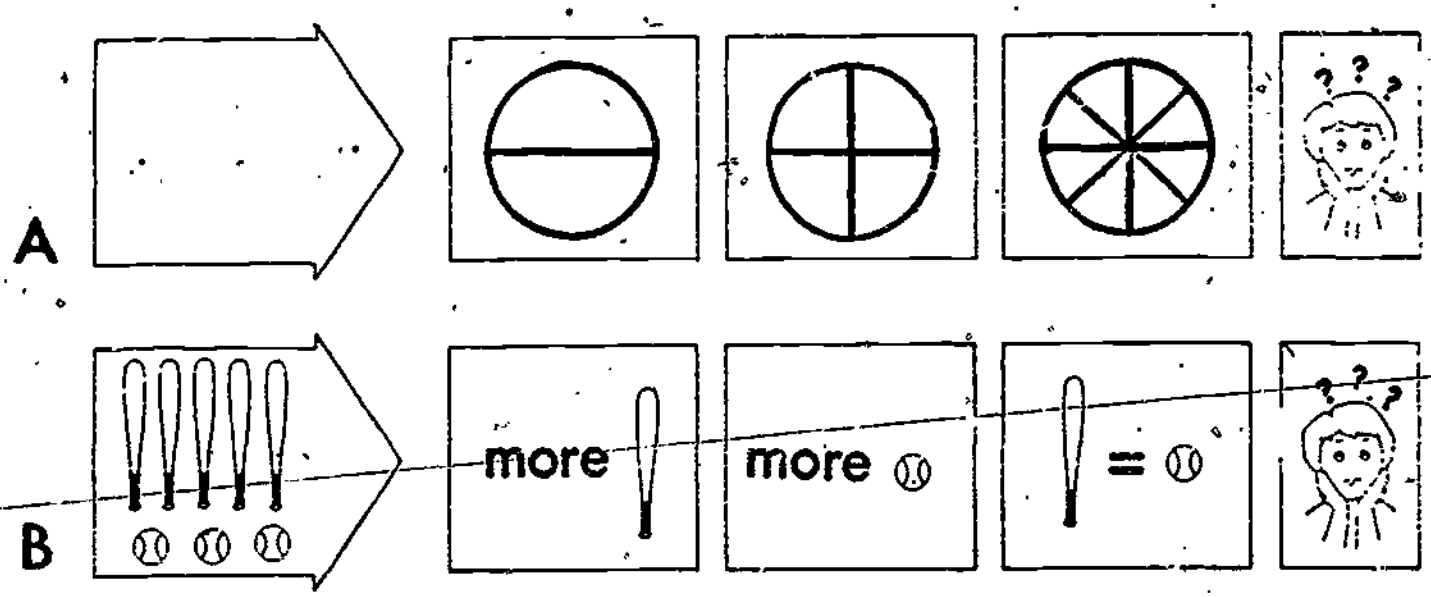
That is all the work we will do today. Remember, we will come again and you will do work like this again. Each time I come, you will be able to do more of the work.

[*Collect the booklets.*]

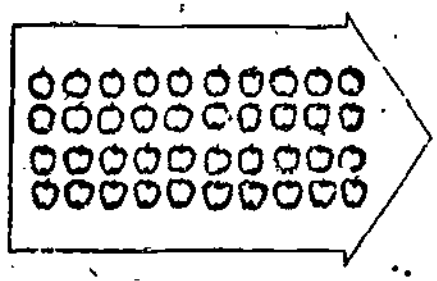
ID_ _ _ _ _ _ _ _ _

Name _____





C



| 39 | 40 | 41 | |
|---|---|---|---|

D

75

| | | | |
|---|---|---|---|

E

| 6 | 19 | 5 | |
|---|---|---|---|

F

| 24 | 56 | 88 | |
|---|---|---|---|

G

| 19 | 11 | 3 | |
|---|---|---|---|

H

| 72 | 64 | 36 | |
|---|---|---|---|

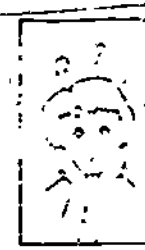
| | | | | |
|---|---|---|---|---|
| I | 37 39 __ 42 45 | 44 | 38 | 41 |
| J | 26 | 20(10)+6 | 1(10)+16 | 2(10)+16 |
| K | | 9−4=□ | 4+9=□ | 94=□ |
| L | | 43−35=□ | 78+35=□ | 78−35=□ |
| M | | 8−6=□ | 14+8=□ | 14−8=□ |
| N | | 67+29=□ | 67−29=□ | 67+67=□ |

70

O

$$\begin{array}{r} 29 \\ +\ \underline{64} \end{array}$$

83 | 93 | 813



P

$$\begin{array}{r} 67 \\ -\ \underline{42} \end{array}$$

32 | 29 | 25

A

B

C

D

# Add



A. 43 + 25

B. 14 + 84

C. 52 + 45

D. 614 + 384

E. 132 + 551

F. 503 + 293

G. 56 + 6

H. 29 + 8

I. 6 + 85

J. 38 + 45

K. 29 + 32

L. 98 + 72

M. 167 + 426

N. 727 + 213

O. 409 + 383

P. 155 + 792

Q. 671 + 176

R. 334 + 484

S. 479 + 479

T. 338 + 595

U. 864 + 658

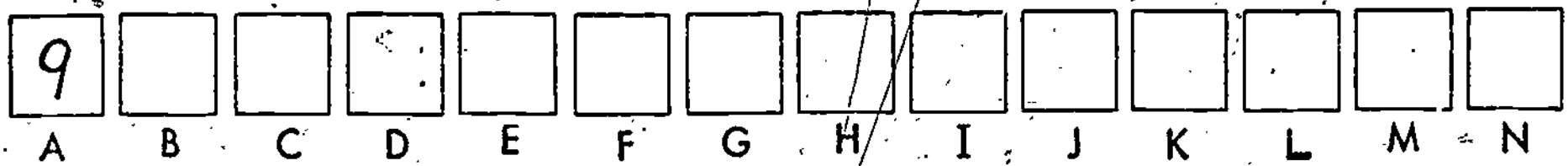
V. 59 49 + 37

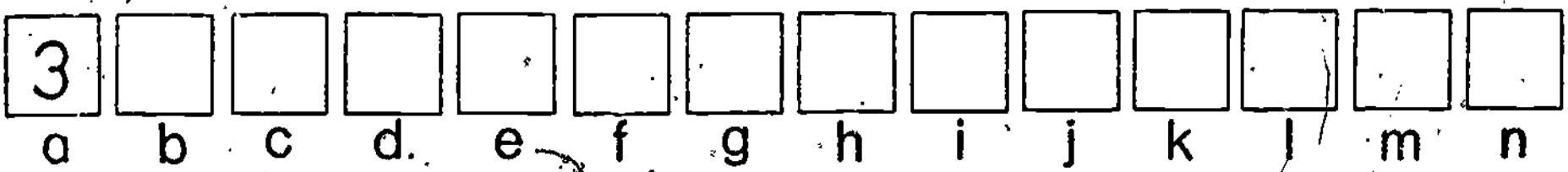
W. 21 33 + 59

X. 86 27 + 98

# Subtract

| | | | |
|---|---|---|---|
| A. 87 − 51 | G. 53 − 9 | M. 864 − 225 | S. 824 − 628 |
| B. 79 − 43 | H. 34 − 6 | N. 774 − 529 | T. 942 − 595 |
| C. 98 − 25 | I. 67 − 8 | O. 952 − 843 | U. 328 − 169 |
| D. 915 − 411 | J. 70 − 39 | P. 614 − 384 | V. 710 − 469 |
| E. 293 − 140 | K. 53 − 34 | Q. 929 − 536 | W. 803 − 427 |
| F. 868 − 443 | L. 83 − 27 | R. 639 − 243 | X. 600 − 212 |


9
A B C D E F G H I J K L M N


3
a b c d e f g h i j k l m n

V

Directions for Administering Achievement Monitoring Test V

Coordinated Study #1 & #2

General Directions

Reading the Test. The first part of this test is in multiple choice format and is read aloud to the children. Read the questions exactly as they are printed in the directions; do not paraphrase. Each question is read twice--or the key phrases are repeated after the original question is read. Read the questions at a conversational pace. The second part of the test involves verbal problems for which the child must write, but not solve, a number sentence. Again, you will read the number story twice. The third part of the test is timed and assesses the child's speed and accuracy using the addition and subtraction algorithms. The fourth segment, the basic facts speed test, is administered via tape.

Since many children will not know how to do the majority of the test, especially at the beginning of the year, they will no doubt want to ask questions or want you to repeat items yet again. Please do not allow this--instead, ask them to answer "as best they can" or to mark the "puzzled face" to show they have "not learned this yet." Note also that reading the answers to the children is not permitted.

Since this is a group-administered test, verbal exchanges with individual children can be distracting and interfering--try to establish a policy of not talking and not allowing the children to talk in between questions.

Should the above directions seem unnecessarily stringent, please realize that we are attempting to measure change over time and that we have very few questions on which to base this measurement. The children will take the other forms of this same test at 6/week intervals and then they will repeat the three forms; hopefully each time they will be able to answer the questions more successfully.

Make sure the children mark only one box and that they mark at least one box. Encourage them to use the "puzzled face" by reminding them that this response means "I haven't learned this (how to do this) yet."

Pacing the Test. Try to keep the test moving. Expecially for the number story and algorithm problems it may take a "long" time for the children to figure out an answer. As a rule of thumb, allow the group to work on each question until only one or two children are still working. At that point, if necessary, suggest that anyone still working mark the "puzzled face" box. Then just go on to the next question without waiting longer. The second part of the test, sentence writing, may go slowly. Remind the children

not to solve the problem. The third part of the test is timed and must be administered accordingly.

The last section, the taped basic facts, is a speed test. Once the tape is started, it will not be stopped.

Estimated Administration Times

Part 1 10 min.
Part 2 5 min.
Part 3 15 min.
Part 4 5 min.

Preparations for Testing

The children will need two pencils with erasers. They will not need scratch paper for this test, since they will write in the "arrow" space. The children's names have been written on the tests in advance; distribute the tests, making sure each child has his/her own test.

Specific Directions

SAY: Today we are going to do some work with numbers in this booklet. You learned how to do some parts of the work last year in first grade. You will learn how to do more of the work this year in second grade. We don't expect you to know how to do all of the work today. We will come back again and again while you are in second grade . . . each time you will have learned how to do more of the work.

Find your name on the line. Look at the big box with an X in it--you will answer the questions today by making a big X like this one.

EXAMPLE A Now find row A. I am going to ask you a question. You will answer by making a big X in one of the boxes. If you haven't learned about the answer yet, make an X in the last box, the one with the puzzled face. [*Pause.*]

Which box has a triangle in it? Make an X on the box with a triangle in it. [*Pause*] If you haven't learned this yet, make an X on the box with the puzzled face. [*Check to see that the children mark only one box in the row.*]

EXAMPLE B Find Row B. Look at the numbers in the arrow. What number comes next? Make an X on the number that comes next.

76
3

Now turn to the next page and fold your booklet.

*[Note: Starting with row C, do not assist the children with the test, except to make sure they are marking only one box ... and at least one box.]*

C Row C. Look at the sticks in the arrow. Make an X on the box that tells how many sticks there are ... the box that tells how many sticks there are. *[Pause.]* Remember, if you haven't learned about this yet, mark the puzzled face.

D Row D. Make an X on the box that has 24 cubes in it ... 24 cubes in it.

E Row E. I am going to read a number story about toy airplanes. I will read the story twice. Listen both times before you mark a box. David has 9 toy airplanes. His sister Nancy has 13 toy airplanes. How many more toy airplanes does Nancy have than David? *[Repeat. Allow time for the children to figure out their answers to rows E-H.]*

F Row F. This number story is about bottle caps. For this story you may write on the paper if you want to. Tom has 24 old bottle caps. He also has 57 new bottle caps. How many bottle caps does Tom have altogether? *[Repeat. If necessary, remind the children to "make an X" on their answer. Also, use the "puzzled face" reminder as necessary.]*

G Row G. This number story is about shells. 17 shells are in a box. Some shells are little. 8 are big. How many little shells are in the box? *[Repeat.]*

H Row H. This number story is about soccer. For this story you may write on the paper if you want to. There were some soccer players on the field. 23 more players came. Now there are 35 players on the field. How many players were on the field at first? *[Repeat. Use "puzzled face" and "make an X" reminders as necessary.]*

Turn to the next page.

I Row I. Which box shows the numbers in order from smallest to largest ... in order from smallest to largest?

J Row J. Look at the little squares in the arrow. Make an X on the box that tells how many squares there are...how many squares there are.

K Row K. Look at the number sentences. One of the number sentences tells how to find the answer for this story about hats. After I read the story, make an X on the number sentence that tells how to find the answer. Karla had 15 hats. She gave 9 hats to Steve. How many hats did Karla have left? *[Repeat.]*

L Row L. This number story is about stickers. Make an X on the number sentence that tells how to find the answer. Sarah has 28 stickers. Her brother Ricky has 34 stickers. How many more stickers does Ricky have than Sarah? [*Repeat.*]

M Row M. This number story is about things to drink. There are 11 glasses on the table. 5 have orange juice in them. The rest have milk in them. How many glasses have milk in them? [*Repeat.*]

N Row N. This number story is about children swimming. There were 46 children swimming in the pool. 27 more children jumped into the pool. How many children were in the pool then? [*Repeat.*]

Turn to the next page.

O Row O. Look at the problem in the arrow. What number is the answer ... what number is the answer? [*Mention "write on paper" reminder*]

P Row P. Look at the problem in the arrow. What number is the answer ... what number is the answer?

Now we will do some different work. I will read a number story to you. Then I want you to write a number sentence for the story. You don't need to solve the sentence. Just write the sentence the best you can without solving it. Write it on the line.

STORY A Judy has 4 chocolate cupcakes. She also has 7 white cupcakes. How many cupcakes does Judy have altogether? [*Repeat.*]

STORY B Steve had 65 pennies. He gave 36 of them to Laura. How many pennies did Steve have left? [*Repeat.*]

STORY C There are 86 marbles in a jar. 54 are big and the rest are little. How many little marbles are in the jar? [*Repeat*]

STORY D Adam has 7 puzzles. How many more puzzles does he have to put with them so he has 12 puzzles altogether? [*Repeat.*]

[*Give the children a short stand up-stretch-touch toes--and so on--"break" here.*]

Turn to the next page, the one that says "ADD" at the top.

Be sure you have the page that says "ADD" on it. All the problems on this page are addition problems. Each problem has a letter by it ... A, B, C, D... all the way to V, W and X. When I say "GO", start with problem A, then do B, then C, and so on until I say "STOP!" If you can't do a problem, go on to the next one. Do as many problems as you can before I say "STOP!" Ready? GO! (Allow 6 minutes) STOP! You worked very hard on these problems. You will be learning how to do them faster. (Reassure the children as you see fit.) Now turn to the page that says "SUBTRACT."

Be sure you have the page that says "SUBTRACT." All the problems on this page are subtraction. When I say "GO," start with problem A, then do B, then C... do as many as you can before I say "STOP!" Ready? GO! (Allow 6 minutes.) I could tell you tried your best on these problems. You will be learning how to do them faster.

Now turn to the last page.

The work on this page is different. I want to see how quickly you can think of the answers for addition and subtraction problems.

I am going to play a tape--the voice on the tape will say problems, like this: [*Play the four sample problems 2 + 8, 5 + 6, 7 + 4, 8 + 3.*] The problems will go very quickly, even faster than when you were in first grade. Today you probably will not know very many answers, but when I come back and we do these problems again, you will know more. Don't feel bad if you don't know the answers today.

We will start with the row of boxes at the top of the page--the ones with capital letters A, B, C .... The voice on the tape will tell you where to write your answers. Do your best to keep up with the voice. Get your pencil ready. [*Start tape.*]

Script on Tape: Look at the row of boxes at the top of the page. Find box A. I am going to say problems like 5 + 4. The answer for 5 + 4 is 9. So there is a 9 in box A. Find Box B. What is 7 + 1? 7 + 1 is 8. You write an 8 in box B.

[*10 second pause; make sure the children are working on the top row.*]

Now I am going to say problems for all the rest of the boxes in the top row. I will not stop, so write your answers quickly. If you can't think of an answer, just leave the box empty. Ready?

Form V

Box C 3 + 1

Box D 2 + 5

Box E 1 + 6

Box F 7 + 2

Box G 2 + 6

Box H 3 + 5

Box I 4 + 8

Box J 3 + 7

Box K 5 + 9

Box L 6 + 8

Box M 8 + 7

Box N 4 + 9

Stop working. You may rest for a moment...then we will work on the bottom row.

[*10 second pause*]

Ready to listen again? Look at the bottom row of boxes. Find Box A. This time I am going to say problems like 9 - 6. The answer for 9 - 6 is 3. So there is a 3 in box A. Find box B. What is 4 - 2? 4 - 2 is 2. You write a 2 in box B.

[*10 second pause--make sure the children are in the bottom row.*]

Now I am going to say problems for the rest of the boxes. I will not stop, so write your answers quickly. If you can't think of an answer, leave the box empty. Ready?

Form V

Box C 7 - 1

Box D 8 - 4

Box E 9 - 5

Box F 7 - 4

Box G 8 - 6

Box H 4 - 3

Box I 11 - 2

Box J 13 - 8

Box K 12 - 7

Box L 15 - 9

Box M 10 - 2

Box N 16 - 7

Stop working. Put your pencil down.

[*Stop the tape.*]

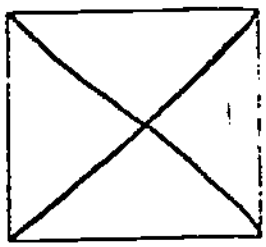
That is all the work we will do today. Remember, we will come again and you will do work like this again. Each time I come, you will be able to do more of the work.

[*Collect the booklets.*]

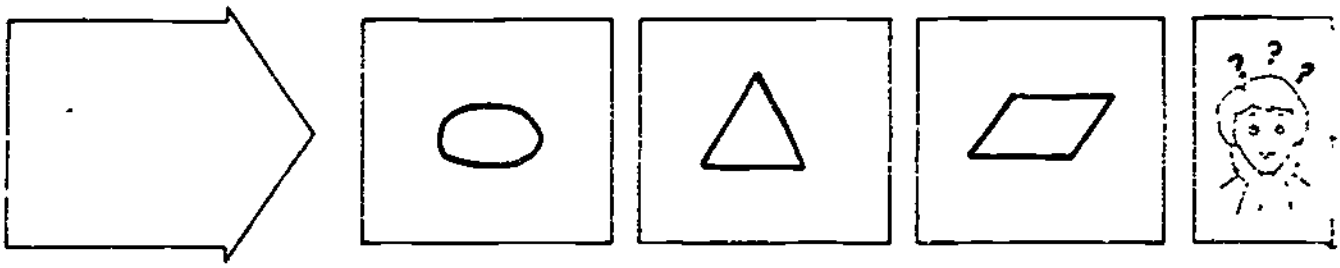
V

ID_ _ _ _ _ _ _ _

Name _____



A



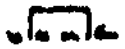
B

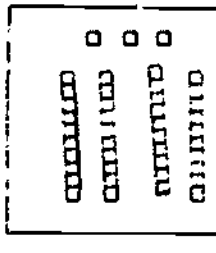
10 11 12 _

9

14

13

| | | | | |
|---|---|---|---|---|
| C | | 87 | 97 | 15 |
| D | | | | |
| E | | 4 | 13 | 5 |
| F | | 33 | 73 | 81 |
| G | | 25 | 17 | 9 |
| H |  | 12 | 23 | 58 |

| | | | | |
|---|---|---|---|---|
| I | | 92 98 89 | 37 57 63 | 28 82 36 |
| J |  | 3 tens + 13 ones | 3 tens + 4 ones | 4 tens + 13 ones |
| K | | 15 + 9 = ☐ | 15 − 9 = ☐ | 9 − 6 = ☐ |
| L | | 28 + 34 = ☐ | 34 + 6 = ☐ | 34 − 28 = ☐ |
| M | | 11 + 5 = ☐ | 11 + 6 = ☐ | 11 − 5 = ☐ |
| N | | 46 − 27 = ☐ | 46 + 27 = ☐ | 61 + 27 = ☐ |

O

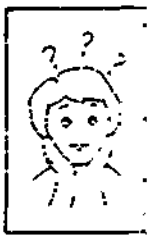
$$\begin{array}{r} 16 \\ +44 \\ \hline \end{array}$$

60 | 50 | 61

P

$$\begin{array}{r} 85 \\ -59 \\ \hline \end{array}$$

34 | 44 | 26



A _____

B _____

C _____

D 103

ERIC

# Add

| | | | |
|---|---|---|---|
| A. 53 + 34 | G. 7 + 56 | M. 426 + 458 | S. 263 + 459 |
| B. 30 + 21 | H. 68 + 8 | N. 239 + 653 | T. 359 + 265 |
| C. 27 + 62 | I. 79 + 7 | O. 115 + 875 | U. 767 + 434 |
| D. 503 + 293 | J. 29 + 64 | P. 174 + 642 | V. 19 64 + 58 |
| E. 265 + 314 | K. 45 + 28 | Q. 583 + 241 | W. 67 25 + 22 |
| F. 332 + 246 | L. 77 + 95 | R. 186 + 570 | X. 58 98 + 85 |

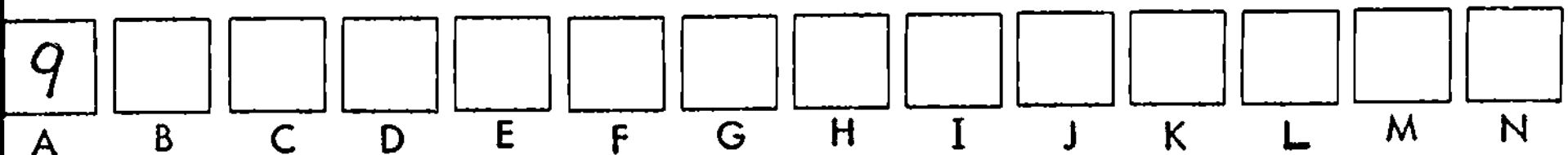
# Subtract



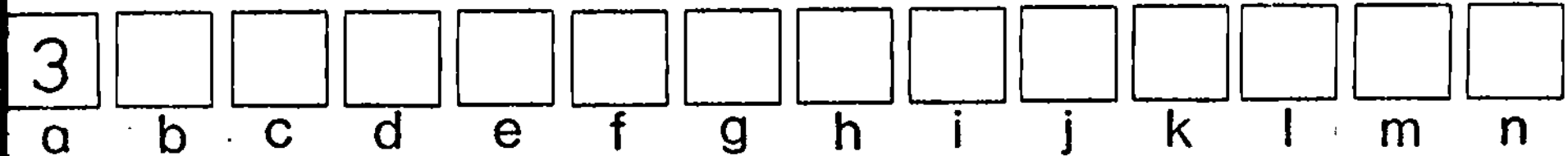
V

| | | | |
|---|---|---|---|
| A. 67 − 42 | G. 32 − 5 | M. 256 − 138 | S. 623 − 334 |
| B. 56 − 25 | H. 74 − 8 | N. 388 − 269 | T. 872 − 586 |
| C. 88 − 76 | I. 61 − 5 | O. 913 − 408 | U. 436 − 337 |
| D. 698 − 457 | J. 72 − 28 | P. 846 − 393 | V. 730 − 438 |
| E. 482 − 231 | K. 83 − 67 | Q. 929 − 743 | W. 504 − 227 |
| F. 985 − 265 | L. 85 − 59 | R. 726 − 186 | X. 600 − 481 |

ERIC





# Directions for Administering Achievement Monitoring Test W

## Coordinated Study #1 & #2

### General Directions

Reading the Test. The first part of this test is in multiple choice format and is read aloud to the children. Read the questions exactly as they are printed in the directions; do not paraphrase. Each question is read twice--or the key phrases are repeated after the original question is read. Read the questions at a conversational pace. The second part of the test involves verbal problems for which the child must write, but not solve, a number sentence. Again, you will read the number story twice. The third part of the test is timed and assesses the child's speed and accuracy using the addition and subtraction algorithms. The fourth segment, the basic facts speed test, is administered via tape.

Since many children will not know how to do the majority of the test, especially at the beginning of the year, they will no doubt want to ask questions or want you to repeat items yet again. Please do not allow this--instead, ask them to answer "as best they can" or to mark the "puzzled face" to show they have "not learned this yet." Note also that reading the answers to the children is not permitted.

Since this is a group-administered test, verbal exchanges with individual children can be distracting and interfering--try to establish a policy of not talking and not allowing the children to talk in between questions.

Should the above directions seem unnecessarily stringent, please realize that we are attempting to measure change over time and that we have very few questions on which to base this measurement. The children will take the other forms of this same test at 6 week intervals and then they will repeat the three forms; hopefully each time they will be able to answer the questions more successfully.

Make sure the children mark only one box and that they mark at least one box. Encourage them to use the "puzzled face" by reminding them that this response means "I haven't learned this (how to do this) yet."

Pacing the Test. Try to keep the test moving. Expecially for the number story and algorithm problems it may take a "long" time for the children to figure out an answer. As a rule of thumb, allow the group to work on each question until only one or two children are still working. At that point, if necessary, suggest that anyone still working mark the "puzzled face" box. Then just go on to the next question without waiting longer. The second part of the test, sentence writing, may go slowly. Remind the children

not to solve the problem. The third part of the test is timed and must be administered accordingly.

The last section, the taped basic facts, is a speed test. Once the tape is started, it will not be stopped.

Estimated Administration Times

Part 1 10 min.
Part 2 5 min.
Part 3 15 min.
Part 4 5 min.

Preparations for Testing

The children will need two pencils with erasers. They will not need scratch paper for this test, since they will write in the "arrow" space. The children's names have been written on the tests in advance; distribute the tests, making sure each child has his/her own test.

Specific Directions

SAY: Today we are going to do some work with numbers in this booklet. You learned how to do some parts of the work last year in first grade. You will learn how to do more of the work this year in second grade. We don't expect you to know how to do all of the work today. We will come back again and again while you are in second grade . . . each time you will have learned how to do more of the work.

Find your name on the line. Look at the big box with an X in it--you will answer the questions today by making a big X like this one.

EXAMPLE A Now find row A. I am going to ask you a question. You will answer by making a big X in one of the boxes. If you haven't learned about the answer yet, make an X in the last box, the one with the puzzled face. [*Pause.*]

Look at the boxes with the black and white dots in them. Which box has the most black dots? Make an X on the box with the most black dots. [*Pause*] If you haven't learned this yet, make an X on the box with the puzzled face. [*Check to see that the children mark only one box in the row.*]

EXAMPLE B Find Row B. Look at the numbers in the arrow. Which box has the numbers in order from largest to smallest? Make an X on the box with the numbers in order from largest to smallest.

Now turn to the next page and fold your booklet.

[*Note: Starting with row C, do not assist the children with the test except to make sure they are marking only one box and at least one box.*]

C Row C. Make an X on the box that has a seventy-four in it ... make an X on the box that has a seventy-four in it. [*Pause.*] If you haven't learned about this yet, mark the puzzled face.

D Row D. Look at the number in the arrow. Make an X on the box that has that many stars in it ... make an X on the box that has that many stars in it.

E Row E. I am going to read a number story about fish. I will read the story twice. Listen both times before you mark a box. Judy has 6 little fish. She also has 9 big fish. How many fish does Judy have altogether? [*Repeat. Allow time for the children to figure out their answers to rows E-H.*]

F Row F. This number story is about comics. For this story, you may write on the paper if you want to. Paul had 43 comics. He gave 28 comics to Carol. How many comics did Paul have left? [*Repeat and give "puzzled face" reminder if necessary to move the test along. You also might need to remind children to "make an X" on their answer.*]

G Row G. This number story is about tickets. First Julie bought 7 tickets to ride on the roller coaster. Then she bought 4 more tickets to ride on the ferris wheel. How many tickets did Julie buy? [*Repeat.*]

H Row H. This story is about a dog's leash. For this story you may write on the paper if you want to. The dog's leash is 75 links long. A part of the leash 47 links long is around a tree. The rest of the leash is not. How long is the part that is not around a tree? [*Repeat. Remind about "puzzled face" and "make an X on answer" as necessary.*]

Turn to the next page.

I Row I. Look at the three purses. Which purse has the least amount of money in it ... the least amount of money?

J Row J. Look at the numbers in the arrow. Make an X on the box that means the same as the numbers in the arrow...that means the same as the numbers in the arrow.

K Row K. Look at the number sentences. One of the number sentences tells how to find the answer for this story about keys. After I read the story, make an X on the number sentence that tells how to find the answer. Sally has 8 keys. Her brother Mike has 14 keys. How many more keys does Mike have than Sally? [*Repeat.*]

L Row L. This number story is about beads. After I read the story, make an X on the number sentence that tells how to find the answer. Jack has 16 red beads. He also has 56 green beads. How many beads does Jack have altogether? [*Repeat.*]

M Row M. This number story is about links. Mark the number sentence that tells how to find the answer. Patty made a chain of links. She used 3 links first. Then she used 8 more links. How many links long is her chain? [*Repeat.*]

N Row N. This number story is about marbles. On Tuesday Melinda won 31 marbles. On Wednesday she won some more marbles. She won 64 marbles altogether. How many marbles did she win on Wednesday? [*Repeat.*]

90 Turn to the next page.

O Row O. Look at the problem in the arrow. What number is the answer ... what number is the answer? [*Mention "write on paper" reminder*]

P Row P. Look at the problem in the arrow. What number is the answer ... what number is the answer?

Now we will do some different work. I will read a number story to you. Then I want you to write a number sentence for the story. You don't need to solve the sentence. Just write the sentence the best you can without solving it. Write it on the line.

STORY A Jenny had 13 balloons. She gave 9 balloons to Ben. How many balloons did Jenny have left? [*Repeat.*]

STORY B Mark has 16 crayons. His sister Pam has 58 crayons. How many more crayons does Pam have than Mark? [*Repeat.*]

STORY C Jean had 26 bottle caps. Her mother gave her 37 more bottle caps. How many bottle caps did Jean have altogether? [*Repeat.*]

STORY D There are 11 trucks in the sandbox. 8 are big and the rest are little. How many little trucks are in the sandbox? [*Repeat.*]

[*Give the children a short stand up-stretch-touch toes--and so on--"break here.*]

Turn to the next page, the one that says "ADD" at the top.

Be sure you have the page that says "ADD" on it. All the problems on this page are addition problems. Each problem has a letter by it ... A, B, C, D... all the way to V, W and X. When I say "GO", start with problem A, then do B, then C, and so on until I say "STOP!" If you can't do a problem, go on to the next one. Do as many problems as you can before I say "STOP!" Ready? GO! (Allow 6 minutes) STOP! You worked very hard on these problems. You will be learning how to do them faster. (Reassure the children as you see fit.) Now turn to the page that says "SUBTRACT."

Be sure you have the page that says "SUBTRACT." All the problems on this page are subtraction. When I say "GO," start with problem A, then do B, then C... do as many as you can before I say "STOP!" Ready? GO! (Allow 6 minutes.) I could tell you tried your best on these problems. You will be learning how to do them faster.

Now turn to the last page.

The work on this page is different. I want to see how quickly you can think of the answers for addition and subtraction problems.

I am going to play a tape--the voice on the tape will say problems, like this: [*Play the four sample problems 2 + 8, 5 + 6, 7 + 4, 8 + 3.*] The problems will go very quickly, even faster than when you were in first grade. Today you probably will not know very many answers, but when I come back and we do these problems again, you will know more. Don't feel bad if you don't know the answers today.

We will start with the row of boxes at the top of the page--the ones with capital letters A, B, C .... The voice on the tape will tell you where to write your answers. Do your best to keep up with the voice. Get your pencil ready. [*Start tape.*]

Script on Tape: Look at the row of boxes at the top of the page. Find box A. I am going to say problems like 5 + 4. The answer for 5 + 4 is 9. So there is a 9 in box A. Find Box B. What is 7 + 1? 7 + 1 is 8. You write an 8 in box B.

[*10 second pause: make sure the children are working on the top row.*]

Now I am going to say problems for all the rest of the boxes in the top row. I will not stop, so write answers quickly. If you can't think of an answer, just leave the box empty. Ready?

Form W

Box C 2 + 4

Box D 6 + 3

Box E 5 + 2

Box F 2 + 3

Box G 5 + 0

Box H 1 + 3

Box I 9 + 2

Box J 6 + 6

Box K 4 + 7

Box L 7 + 6

Box M 9 + 7

Box N 6 + 4

Stop working. You may rest for a moment...then we will work on the bottom row.

[*10 second pause*]

Ready to listen again? Look at the bottom row of boxes. Find Box A. This time I am going to say problems like 9 - 6. The answer for 9 - 6 is 3. So there is a 3 in box A. Find box B. What is 4 - 2? 4 - 2 is 2. You write a 2 in box B.

[*10 second pause--make sure the children are in the bottom row.*]

Now I am going to say problems for the rest of the boxes. I will not stop, so write your answers quickly. If you can't think of an answer, leave the box empty. Ready?

Form W

Box C 3 - 2

Box D 6 - 4

Box E 9 - 1

Box F 7 - 3

Box G 6 - 1

Box H 7 - 5

Box I 10 - 4

Box J 13 - 9

Box K 14 - 8

Box L 11 - 7

Box M 12 - 4

Box N 17 - 9

Stop working. Put your pencil down.

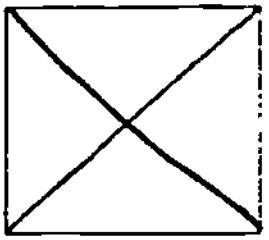
[*Stop the tape.*]

That is all the work we will do today. Remember, we will come again and you will do work like this again. Each time I come, you will be able to do more of the work.

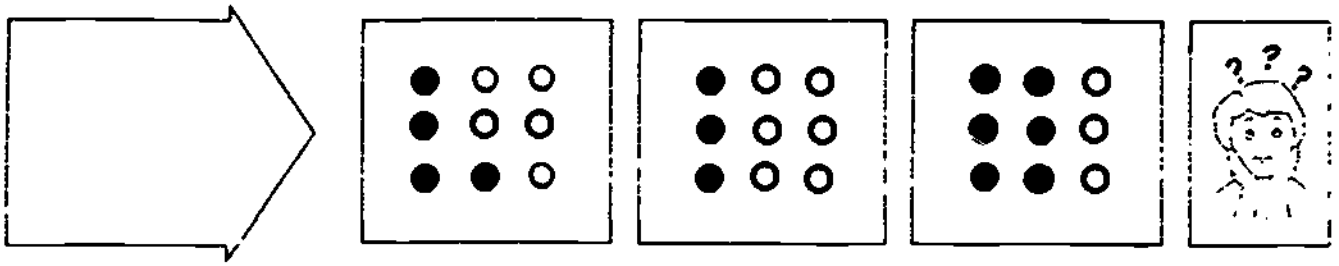
[*Collect the booklets.*]

ID_ _ _ _ _ _ _ _ _

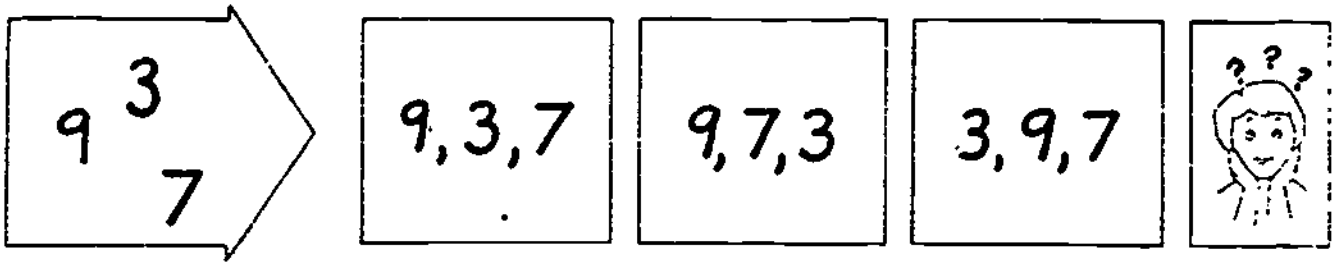
Name _____



A



B



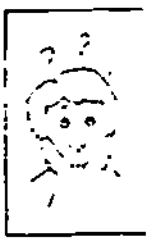
| | | | | |
|---|---|---|---|---|
| C | | 44 | 47 | 74 |
| D | 36 | ********** ********** ********** ****** | ********** ********** ********** ********** ********** ********** *** | ********** ********** ****** |
| E | | 3 | 14 | 15 |
| F | | 25 | 15 | 35 |
| G | | 3 | 12 | 11 |
| H | | 28 | 32 | 112 |

| | | | | |
|---|---|---|---|---|
| I | | | | |
| J | 7(10)+18 | 78 | 718 | 88 |
| K | | 14+8=□ | 14-8=□ | 14+6=□ |
| L | | 72+56=□ | 56-16=□ | 16+56=□ |
| M | | 8+8=□ | 8-3=□ | 3+8=□ |
| N | | 64=□ | 64-31=□ | 31+64=□ |

96

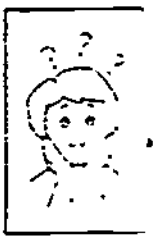
O

$$\begin{array}{r} 53 \\ +\ 34 \\ \hline \end{array}$$

| 21 | 87 | 67 |  |
|---|---|---|---|

P

$$\begin{array}{r} 32 \\ -\ 5 \\ \hline \end{array}$$

| 27 | 37 | 7 |  |
|---|---|---|---|

A

B

C

D

# Add





A. 51 + 27

B. 40 + 48

C. 25 + 22

D. 362 + 205

E. 417 + 212

F. 683 + 215

G. 64 + 7

H. 6 + 84

I. 7 + 59

J. 19 + 44

K. 56 + 34

L. 59 + 65

M. 104 + 839

N. 559 + 236

O. 328 + 349

P. 431 + 272

Q. 594 + 383

R. 482 + 436

S. 347 + 589

T. 188 + 295

U. 996 + 317

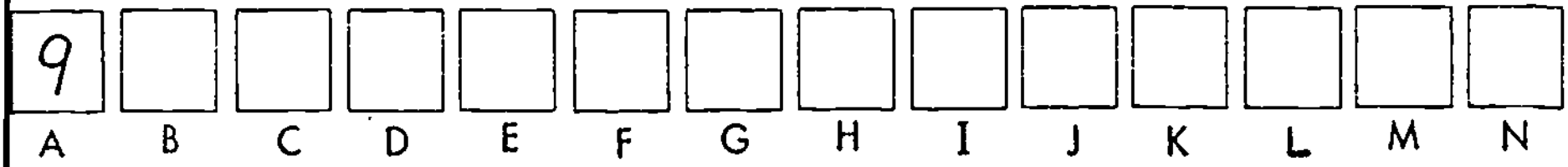
V. 69 34 + 57

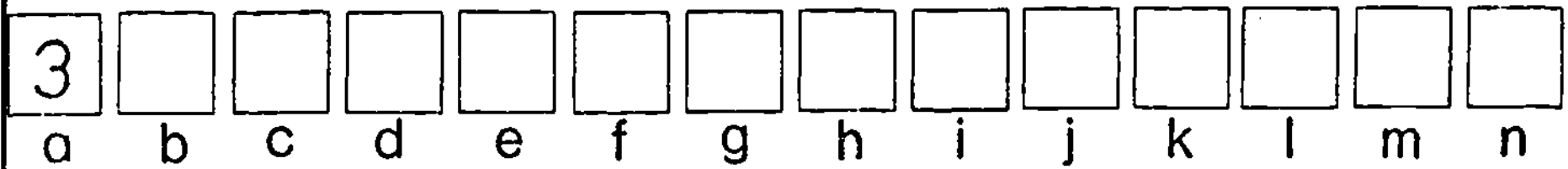
W. 86 54 + 46

X. 95 99 + 78

# Subtract

| | | | |
|---|---|---|---|
| A. 94 − 60 | G. 63 − 4 | M. 453 − 215 | S. 428 − 289 |
| B. 78 − 64 | H. 95 − 7 | N. 950 − 219 | T. 661 − 462 |
| C. 48 − 21 | I. 77 − 8 | O. 994 − 336 | U. 685 − 596 |
| D. 634 − 523 | J. 31 − 15 | P. 746 − 584 | V. 620 − 545 |
| E. 582 − 232 | K. 77 − 29 | Q. 914 − 540 | W. 701 − 599 |
| F. 998 − 676 | L. 72 − 63 | R. 677 − 393 | X. 400 − 276 |




99



ERIC

Appendix B

ITEM STATISTICS FOR FORMS U, V, W

FOR THE TOTAL POPULATION

LERTAP 2.0 SUMMARY ITEM STATISTICS 

TEST AC 1 ACHIEVEMENT MONITORING 90 SUBTEST 1 OBJECTIVES TEST

ITEM NUMBER 1

| | OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEAN | TT MEAN | ITEM DESCRIPTIONS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 0 | 1 | 3.2 | | .00 | -.04 | .00 | -.10 | | 11.00 | 63.00 | |
| C | 2 | 1 | 27 | 87.1 | C | .57 | .38 | .88 | .58 | C | 11.41 | 66.96 | Numerousness |
| | 3 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | Writes 0-99 |
| | 4 | 0 | 3 | 9.7 | | -.65 | -.40 | -1.12 | -.70 | | 7.33 | 52.00 | |
| | TOTAL | | 31 | | | | | | | | | | |

ITEM NUMBER 2

| | OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEAN | TT MEAN | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| | 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | Numerousness |
| C | 3 | 1 | 28 | 90.3 | C | .59 | .45 | .96 | .74 | C | 11.36 | 67.00 | Represents 0-99 |
| | 4 | 0 | 3 | 9.7 | | -.59 | -.45 | -1.02 | -.78 | | 7.67 | 50.33 | |
| | TOTAL | | 31 | | | | | | | | | | |

ITEM NUMBER 3

| | OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEAN | TT MEAN | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 0 | 3 | 9.7 | | -.24 | .01 | -.41 | .01 | | 9.67 | 65.67 | |
| | 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | Problem Solving (A) |
| C | 3 | 1 | 27 | 87.1 | C | .26 | .08 | .40 | .12 | C | 11.19 | 65.70 | Subt-simple separating 11-15 |
| | 4 | 0 | 1 | 3.2 | | -.10 | -.16 | -.24 | -.39 | | 10.00 | 56.00 | |
| | TOTAL | | 31 | | | | | | | | | | |

ITEM NUMBER 4

| | OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEAN | TT MEAN | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| C | 1 | 1 | 18 | 58.1 | C | .60 | .34 | .76 | .43 | C | 11.94 | 68.50 | |
| | 2 | 0 | 2 | 6.5 | | -.14 | -.09 | -.28 | -.18 | | 10.00 | 61.50 | Problem Solving (A) |
| | 3 | 0 | 7 | 22.6 | | -.54 | -.19 | -.75 | -.26 | | 9.14 | 61.57 | Subt-comparison 0-99 |
| | 4 | 0 | 4 | 12.9 | | -.10 | -.19 | -.17 | -.30 | | 10.50 | 60.00 | |
| | TOTAL | | 31 | | | | | | | | | | |

| | | | | | COEFFICIENTS OF CORRELATION | | | | | MEANS | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST | TT | |
| 1 | 0 | 4 | 12.9 | | -.16 | -.20 | -.25 | -.32 | | 10.25 | 59.75 | |
| 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | Problem Solving (B) |
| C 3 | 1 | 25 | 80.6 | C | .53 | .42 | .75 | .60 | C | 11.48 | 67.64 | Subt-join-addend 11-15 |
| 4 | 0 | 2 | 6.5 | | -.64 | -.41 | -1.25 | -.80 | | 6.50 | 48.50 | |
| TOTAL | | 31 | | | | | | | | | | |

ITEM NUMBER 16

| | | | | | COEFFICIENTS OF CORRELATION | | | | | MEANS | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST | TT | |
| C 1 | 1 | 29 | 93.5 | C | .36 | .26 | .63 | .46 | C | 11.17 | 66.14 | |
| 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | Problem Solving (B) |
| 3 | 0 | 1 | 3.2 | | -.39 | -.12 | -.97 | -.30 | | 7.00 | 56.00 | Add-simple joining 0-99 |
| 4 | 0 | 1 | 3.2 | | -.10 | -.24 | -.24 | -.99 | | 10.00 | 51.00 | |
| TOTAL | | 31 | | | | | | | | | | |





TEST NO 1 ACHIEVEMENT MONITORING 9U SUBTEST 1 OBJECTIVES TEST

ITEM NUMBER 17

| | | | | | COEFFICIENTS OF CORRELATION | | | | | MEANS | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST | TT | |
| 1 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| 2 | 0 | 1 | 3.2 | | .00 | -.21 | .00 | -.51 | | 11.00 | 53.00 | Order, Place Value |
| C 3 | 1 | 30 | 96.8 | C | .00 | .21 | .00 | .40 | C | 11.00 | 65.80 | Ordering 0-99 |
| 4 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| TOTAL | | 31 | | | | | | | | | | |

ITEM NUMBER 18

| | | | | | COEFFICIENTS OF CORRELATION | | | | | MEANS | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST | TT | |
| 1 | 0 | 19 | 61.3 | | .07 | -.01 | .09 | -.02 | | 11.11 | 65.26 | |
| C 2 | 1 | 5 | 16.1 | C | .28 | .16 | .43 | .24 | C | 12.20 | 69.40 | Order, Place Value |
| 3 | 0 | 1 | 3.2 | | -.39 | -.12 | -.97 | -.30 | | 7.00 | 58.00 | Place Value 0-99 |
| 4 | 0 | 6 | 19.4 | | -.18 | -.08 | -.25 | -.11 | | 10.33 | 63.67 | |
| TOTAL | | 31 | | | | | | | | | | |

ITEM NUMBER

| | OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST | TT | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| C | 2 | 1 | 30 | 96.8 | C | .59 | .39 | 1.15 | .76 | C | 11.20 | 66.17 | Sentence Writing (A) |
| | 3 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | Add-part part whole 11-15 |
| | 4 | 0 | 1 | 3.2 | | -.59 | -.39 | -1.45 | -.96 | | 5.00 | 42.00 | |
| | TOTAL | | 31 | | | | | | | | | | |

ITEM NUMBER 10

COEFFICIENTS OF CORRELATION

MEANS

| | OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST | TT | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| | 2 | 0 | 1 | 3.2 | | .00 | .26 | .00 | .64 | | 11.00 | 81.00 | Sentence Writing (A) |
| C | 3 | 1 | 30 | 96.8 | C | .00 | -.26 | .00 | -.51 | C | 11.00 | 64.87 | Subt-simple separating 0-99 |
| | 4 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| | TOTAL | | 31 | | | | | | | | | | |



TEST NO 1 ACHIEVEMENT MONITORING 9U SUBTEST 1 OBJECTIVES TEST

ITEM NUMBER 11

COEFFICIENTS OF CORRELATION

MEANS

| | OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST | TT | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 0 | 2 | 6.5 | | .14 | .31 | .28 | .59 | | 12.00 | 78.00 | |
| | 2 | 0 | 18 | 58.1 | | -.35 | -.20 | -.45 | -.25 | | 10.44 | 63.56 | Sentence Writing (B) |
| C | 3 | 1 | 10 | 32.3 | C | .52 | .20 | .68 | .26 | C | 12.40 | 68.50 | Subt-join-addend 11-15 |
| | 4 | 0 | 1 | 3.2 | | -.59 | -.39 | -1.45 | -.96 | | 5.00 | 42.00 | |
| | TOTAL | | 31 | | | | | | | | | | |

ITEM NUMBER 12

COEFFICIENTS OF CORRELATION

MEANS

| | OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST | TT | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 0 | 5 | 16.1 | | -.19 | -.09 | -.29 | -.13 | | 10.20 | 63.20 | |
| C | 2 | 1 | 24 | 77.4 | C | .58 | .30 | .81 | .41 | C | 11.58 | 67.12 | Sentence Writing (B) |
| | 3 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | Subt-part part whole-addend 0-99 |
| | 4 | 0 | 2 | 6.5 | | -.71 | -.37 | -1.38 | -.73 | | 6.00 | 50.00 | |
| | TOTAL | | 31 | | | | | | | | | | |

LERTAP 2.0

SUMMARY ITEM STATISTICS

TEST NO 1 ACHIEVEMENT MONITORING 9U

SUBTEST 1 OBJECTIVES TEST

106

ITEM NUMBER 13

| OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 4 | 12.9 | | -.31 | -.16 | -.50 | -.26 | | 9.50 | 60.75 | |
| C 2 | 1 | 27 | 87.1 | C | .31 | .16 | .48 | .25 | C | 11.22 | 66.07 | Algorithms |
| 3 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | Addition Algorithm |
| 4 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| TOTAL | | 31 | | | | | | | | | | |

ITEM NUMBER 14

| OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | Algorithms |
| C 3 | 1 | 31 | 100.0 | C | .00 | .00 | .00 | .00 | C | 11.00 | 65.39 | Subtraction Algorithm |
| 4 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| TOTAL | | 31 | | | | | | | | | | |



123

LERTAP 2.0 — SUMMARY ITEM STATISTICS

TEST NO 1 ACHIEVEMENT MONITORING 90 — SUBTEST 2 SENTENCE WRITING FREE RESPONSE

ITEM NUMBER 1

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEAN | TT MEAN | ITEM DESCRIPTIONS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| C 1 | 1 | 18 | 58.1 | C | .85 | .34 | 1.07 | .43 | C | 3.78 | 68.56 | Sentence Writing |
| 2 | 0 | 13 | 41.9 | | -.85 | -.34 | -1.07 | -.43 | | 2.00 | 61.00 | Subt-comparisnn 11-15 |
| TOTAL | | 31 | | | | | | | | | | |

ITEM NUMBER 2

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEAN | TT MEAN | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| C 1 | 1 | 30 | 96.8 | C | .54 | .16 | 1.04 | .31 | C | 3.13 | 65.70 | Sentence Writing |
| 2 | 0 | 1 | 3.2 | | -.54 | -.16 | -1.31 | -.39 | | .00 | 56.00 | Add-part part whole 0-99 |
| TOTAL | | 31 | | | | | | | | | | |

ITEM NUMBER 3

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEAN | TT MEAN | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| C 1 | 1 | 16 | 51.6 | C | .84 | .36 | 1.06 | .45 | C | 3.87 | 69.19 | Sentence Writing |
| 2 | 0 | 15 | 48.4 | | -.84 | -.36 | -1.06 | -.45 | | 2.13 | 61.33 | Subt-join-addend 0-99 |
| TOTAL | | 31 | | | | | | | | | | |

ITEM NUMBER 4

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEAN | TT MEAN | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| C 1 | 1 | 30 | 96.8 | C | .54 | .16 | 1.04 | .31 | C | 3.13 | 65.70 | Sentence Writing |
| 2 | 0 | 1 | 3.2 | | -.54 | -.16 | -1.31 | -.39 | | .00 | 56.00 | Add-simple joining 11-15 |
| TOTAL | | 31 | | | | | | | | | | |

TEST NO 1 ACHIEVEMENT MONITORING 9U SUBTEST 3 ADDITION FACTS



ITEM NUMBER 1

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEANS | TT MEANS | ITEM DESCRIPTIONS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| C 1 | 1 | 31 | 100.0 | C | .00 | .00 | .00 | .00 | C | 10.48 | 65.39 | 1 + 5 |
| 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| TOTAL | | 31 | | | | | | | | | | |

ITEM NUMBER 2

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEANS | TT MEANS | ITEM DESCRIPTIONS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| C 1 | 1 | 31 | 100.0 | C | .00 | .00 | .00 | .00 | C | 10.48 | 65.39 | 3 + 2 |
| 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| TOTAL | | 31 | | | | | | | | | | |

ITEM NUMBER 3

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEANS | TT MEANS | ITEM DESCRIPTIONS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| C 1 | 1 | 31 | 100.0 | C | .00 | .00 | .00 | .00 | C | 10.48 | 65.39 | 4 + 4 |
| 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| TOTAL | | 31 | | | | | | | | | | |

ITEM NUMBER 4

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEANS | TT MEANS | ITEM DESCRIPTIONS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| C 1 | 1 | 31 | 100.0 | C | .00 | .00 | .00 | .00 | C | 10.48 | 65.39 | 3 + 6 |
| 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| TOTAL | | 31 | | | | | | | | | | |

ITEM NUMBER 5

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEANS | TT MEANS | ITEM DESCRIPTIONS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| C 1 | 1 | 30 | 96.8 | C | .50 | .21 | .96 | .40 | C | 10.63 | 65.80 | 4 + 3 |
| 2 | 0 | 1 | 3.2 | | -.50 | -.21 | -1.22 | -.51 | | 6.00 | 53.00 | |
| TOTAL | | 31 | | | | | | | | | | |

TEST NO 1 ACHIEVEMENT MONITORING 9U SUBTEST 3 ADDITION FACTS

ITEM NUMBER 6

| OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION P8-ST | P8-TT | B-ST | B-TT | | MEANS ST | TT | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | 6 + 2 |
| C 1 | 1 | 31 | 100.0 | C | .00 | .00 | .00 | .00 | C | 10.48 | 65.39 | |
| 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| TOTAL | | 31 | | | | | | | | | | |

ITEM NUMBER 7

| OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION P8-ST | P8-TT | B-ST | B-TT | | MEANS ST | TT | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 6 | 19.4 | | -.59 | -.24 | -.85 | -.34 | | 8.50 | 60.17 | |
| C 1 | 1 | 24 | 77.4 | C | .63 | .28 | .87 | .38 | C | 11.04 | 67.00 | 5 + 8 |
| 2 | 0 | 1 | 3.2 | | -.16 | -.12 | -.40 | -.30 | | 9.00 | 58.00 | |
| TOTAL | | 31 | | | | | | | | | | |

ITEM NUMBER 8

| OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION P8-ST | P8-TT | B-ST | B-TT | | MEANS ST | TT | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 5 | 16.1 | | -.66 | -.27 | -1.00 | -.40 | | 8.00 | 58.80 | |
| C 1 | 1 | 20 | 64.5 | C | .71 | .39 | .91 | .50 | C | 11.35 | 68.55 | 6 + 9 |
| 2 | 0 | 6 | 19.4 | | -.24 | -.23 | -.35 | -.33 | | 9.67 | 60.33 | |
| TOTAL | | 31 | | | | | | | | | | |

ITEM NUMBER 9

| OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION P8-ST | P8-TT | B-ST | B-TT | | MEANS ST | TT | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 2 | 6.5 | | -.48 | -.24 | -.93 | -.47 | | 7.50 | 55.50 | |
| C 1 | 1 | 29 | 93.5 | C | .48 | .24 | .84 | .42 | C | 10.69 | 66.07 | 9 + 3 |
| 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| TOTAL | | 31 | | | | | | | | | | |

ITEM NUMBER 10

| OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION P8-ST | P8-TT | B-ST | B-TT | | MEANS ST | TT | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 8 | 25.8 | | -.67 | -.46 | -.90 | -.63 | | 8.62 | 66.87 | 5 + 7 |
| C 1 | 1 | 21 | 67.7 | C | .71 | .63 | .92 | .82 | C | 11.29 | 70.10 | |
| 2 | 0 | 2 | 6.5 | | -.16 | -.37 | -.31 | -.73 | | 9.50 | 60.00 | |
| TOTAL | | 31 | | | | | | | | | | |

TEST NO 1 ACHIEVEMENT MONITORING 9U SUBTEST 3 ADDITION FACTS

011

ITEM NUMBER 11

| OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 10 | 32.3 | | -.75 | -.56 | -.98 | -.73 | | 8.70 | 56.60 | |
| C 1 | 1 | 19 | 61.3 | C | .80 | .61 | 1.01 | .78 | C | 11.53 | 70.68 | 8 + 9 |
| 2 | 0 | 2 | 6.5 | | -.16 | -.15 | -.31 | -.30 | | 9.50 | 59.00 | |
| TOTAL | | 31 | | | | | | | | | | |

ITEM NUMBER 12

| OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 4 | 12.9 | | -.35 | -.31 | -.55 | -.49 | | 9.00 | 56.75 | |
| C 1 | 1 | 27 | 87.1 | C | .35 | .31 | .54 | .47 | C | 10.70 | 66.67 | 3 + 8 |
| 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| TOTAL | | 31 | | | | | | | | | | |

TEST NO 1 ACHIEVEMENT MONITORING 90 SUBTEST 4 SUBTRACTION FACTS

ITEM NUMBER 1

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | MEANS TT | ITEM DESCRIPTIONS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| C 1 | 1 | 30 | 96.8 | C | .10 | .24 | .18 | .47 | C | 9.97 | 65.87 | 5 - 1 |
| 2 | 0 | 1 | 3.2 | | -.10 | -.24 | -.23 | -.59 | | 9.00 | 51.00 | |
| TOTAL | | 31 | | | | | | | | | | |

ITEM NUMBER 2

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | MEANS TT | ITEM DESCRIPTIONS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| C 1 | 1 | 30 | 96.6 | C | .30 | .21 | .56 | .40 | C | 10.03 | 65.00 | 9 - 2 |
| 2 | 0 | 1 | 3.2 | | -.30 | -.21 | -.73 | -.5 | | 7.00 | 53.00 | |
| TOTAL | | 31 | | | | | | | | | | |

ITEM NUMBER 3

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | MEANS TT | ITEM DESCRIPTIONS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| C 1 | 1 | 31 | 100.0 | C | .00 | .00 | .00 | .00 | C | 9.94 | 65.39 | 8 - 7 |
| 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| TOTAL | | 31 | | | | | | | | | | |

ITEM NUMBER 4

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | MEANS TT | ITEM DESCRIPTIONS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 1 | 3.2 | | -.10 | -.24 | -.23 | -.59 | | 9.00 | 51.00 | |
| C 1 | 1 | 30 | 96.8 | C | .10 | .24 | .18 | .47 | C | 9.97 | 65.87 | 5 - 3 |
| 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| TOTAL | | 31 | | | | | | | | | | |

ITEM NUMBER 5

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | MEANS TT | ITEM DESCRIPTIONS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| C 1 | 1 | 31 | 100.0 | C | .00 | .00 | .00 | .00 | C | 9.94 | 65.39 | 7 - 6 |
| 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| TOTAL | | 31 | | | | | | | | | | |

TEST NO 1 ACHIEVEMENT MONITORING 9U SUBTEST 4 SUBTRACTION FACTS



ITEM NUMBER 6

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 2 | 6.5 | | -.50 | -.15 | -.98 | -.30 | | 6.50 | 59.00 |
| C 1 | 1 | 29 | 93.5 | C | .50 | .15 | .88 | .27 | C | 10.17 | 65.83 |
| 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| TOTAL | | 31 | | | | | | | | | |

COEFFICIENTS OF CORRELATION — MEANS

8 - 5

ITEM NUMBER 7

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 3 | 9.7 | | -.54 | -.19 | -.92 | -.33 | | 7.00 | 59.00 |
| C 1 | 1 | 26 | 83.9 | C | .57 | .29 | .84 | .43 | C | 10.38 | 66.77 |
| 2 | 0 | 2 | 6.5 | | -.21 | -.20 | -.41 | -.40 | | 8.50 | 57.00 |
| TOTAL | | 31 | | | | | | | | | |

COEFFICIENTS OF CORRELATION — MEANS

14 - 7

ITEM NUMBER 8

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 7 | 22.6 | | -.63 | -.45 | -.87 | -.63 | | 7.86 | 56.29 |
| C 1 | 1 | 22 | 71.0 | C | .57 | .50 | .75 | .66 | C | 10.59 | 68.86 |
| 2 | 0 | 2 | 6.5 | | .01 | -.15 | .02 | -.30 | | 10.00 | 59.00 |
| TOTAL | | 31 | | | | | | | | | |

COEFFICIENTS OF CORRELATION — MEANS

12 - 5

ITEM NUMBER 9

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 6 | 19.4 | | -.48 | -.36 | -.69 | -.52 | | 8.17 | 57.33 |
| C 1 | 1 | 24 | 77.4 | C | .58 | .41 | .80 | .57 | C | 10.50 | 67.79 |
| 2 | 0 | 1 | 3.2 | | -.30 | -.16 | -.73 | -.39 | | 7.00 | 56.00 |
| TOTAL | | 31 | | | | | | | | | |

COEFFICIENTS OF CORRELATION — MEANS

11 - 8

ITEM NUMBER 10

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 10 | 32.3 | | -.59 | -.41 | -.77 | -.54 | | 8.40 | 58.90 |
| C 1 | 1 | 17 | 54.8 | C | .62 | .31 | .78 | .39 | C | 10.94 | 68.47 |
| 2 | 0 | 4 | 12.9 | | -.09 | .11 | -.15 | .18 | | 9.50 | 68.50 |
| TOTAL | | 31 | | | | | | | | | |

COEFFICIENTS OF CORRELATION — MEANS

13 - 7

TEST NO 1 ACHIEVEMENT MONITORING 9U SUBTEST 4 SUBTRACTION FACTS

ITEM NUMBER 11

| | OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 0 | 6 | 19.4 | | -.62 | -.38 | -.89 | -.54 | | 7.67 | 67.00 | |
| C | 1 | 1 | 21 | 67.7 | C | .59 | .22 | .77 | .28 | C | 10.67 | 67.00 | 12 - 9 |
| | 2 | 0 | 4 | 12.9 | | -.09 | .15 | -.15 | .23 | | 9.50 | 69.50 | |
| | TOTAL | | 31 | | | | | | | | | | |

ITEM NUMBER 12

| | OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 0 | 11 | 35.5 | | -.54 | -.46 | -.69 | -.59 | | 8.64 | 58.64 | |
| C | 1 | 1 | 17 | 54.8 | C | .58 | .38 | .73 | .48 | C | 10.88 | 69.12 | 15 - 8 |
| | 2 | 0 | 3 | 9.7 | | -.11 | .11 | -.19 | .19 | | 9.33 | 69.00 | |
| | TOTAL | | 31 | | | | | | | | | | |

TEST NO 1 ACHIEVEMENT MONITORING 90 SUBTEST 5 ADDITION ALGORITHM

ITEM DESCRIPTIONS

ITEM NUMBER 1

| OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| C 1 | 1 | 31 | 100.0 | C | .00 | .00 | .00 | .00 | C | 18.94 | 65.39 |
| 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| TOTAL | | 31 | | | | | | | | | |

43
+ 25

ITEM NUMBER 2

| OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| C 1 | 1 | 30 | 96.8 | C | .30 | .12 | .58 | .24 | C | 19.13 | 65.63 |
| 2 | 0 | 1 | 3.2 | | -.30 | -.12 | -.73 | -.30 | | 13.00 | 58.00 |
| TOTAL | | 31 | | | | | | | | | |

14
+ 84

ITEM NUMBER 3

| OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| C 1 | 1 | 31 | 100.0 | C | .00 | .00 | .00 | .00 | C | 18.94 | 65.39 |
| 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| TOTAL | | 31 | | | | | | | | | |

52
+ 45

ITEM NUMBER 4

| OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| C 1 | 1 | 30 | 96.8 | C | .30 | .12 | .58 | .24 | C | 19.13 | 65.63 |
| 2 | 0 | 1 | 3.2 | | -.30 | -.12 | -.73 | -.30 | | 13.00 | 58.00 |
| TOTAL | | 31 | | | | | | | | | |

614
+ 384

ITEM NUMBER 5

| OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| C 1 | 1 | 31 | 100.0 | C | .00 | .00 | .00 | .00 | C | 18.94 | 65.39 |
| 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| TOTAL | | 31 | | | | | | | | | |

132
+ 551

TEST NO 1 ACHIEVEMENT MONITORING 9U SUBTEST 5 ADDITION ALGORITHM

ITEM NUMBER 6

| OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| C 1 | 1 | 31 | 100.0 | C | .00 | .00 | .00 | .00 | C | 18.94 | 65.39 |
| 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| TOTAL | | 31 | | | | | | | | | |

503
+ 293

ITEM NUMBER 7

| OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| C 1 | 1 | 29 | 93.5 | C | -.00 | -.06 | -.01 | -.11 | C | 18.93 | 65.21 |
| 2 | 0 | 2 | 6.5 | | .00 | .06 | .01 | .12 | | 19.00 | 68.00 |
| TOTAL | | 31 | | | | | | | | | |

56
+ 6

ITEM NUMBER 8

| OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| C 1 | 1 | 29 | 93.5 | C | -.04 | -.03 | -.07 | -.05 | C | 18.90 | 65.31 |
| 2 | 0 | 2 | 6.5 | | .04 | .03 | .08 | .05 | | 19.50 | 66.50 |
| TOTAL | | 31 | | | | | | | | | |

29
+ 8

ITEM NUMBER 9

| OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| C 1 | 1 | 29 | 93.5 | C | .10 | .23 | .18 | .40 | C | 19.03 | 66.03 |
| 2 | 0 | 2 | 6.5 | | -.10 | -.23 | -.20 | -.44 | | 17.50 | 56.00 |
| TOTAL | | 31 | | | | | | | | | |

6
+ 85

ITEM NUMBER 10

| OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| C 1 | 1 | 30 | 96.8 | C | -.00 | -.14 | -.01 | -.28 | C | 18.93 | 65.10 |
| 2 | 0 | 1 | 3.2 | | .00 | .14 | .01 | .35 | | 19.00 | 74.00 |
| TOTAL | | 31 | | | | | | | | | |

38
+ 45

115

TEST NO 1 ACHIEVEMENT MONITORING 9U SUBTEST 5 ADDITION ALGORITHM

116

ITEM NUMBER 11

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEAN | TT MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| C 1 | 1 | 31 | 100.0 | C | .00 | .00 | .00 | .00 | C | 18.94 | 65.39 |
| 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| TOTAL | | 31 | | | | | | | | | |

29 + 32

ITEM NUMBER 12

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEAN | TT MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 1 | 3.2 | | -.15 | -.04 | -.36 | -.10 | | 16.00 | 63.00 |
| C 1 | 1 | 20 | 64.5 | C | .32 | .26 | .41 | .34 | C | 19.80 | 67.50 |
| 2 | 0 | 10 | 32.3 | | -.27 | -.25 | -.36 | -.33 | | 17.50 | 61.40 |
| TOTAL | | 31 | | | | | | | | | |

98 + 72

ITEM NUMBER 13

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEAN | TT MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| C 1 | 1 | 22 | 71.0 | C | .70 | .51 | .92 | .66 | C | 20.55 | 68.95 |
| 2 | 0 | 9 | 29.0 | | -.70 | -.51 | -.92 | -.66 | | 15.00 | 56.67 |
| TOTAL | | 31 | | | | | | | | | |

167 + 426

ITEM NUMBER 14

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEAN | TT MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 2 | 6.5 | | -.29 | -.21 | -.56 | -.42 | | 15.00 | 56.50 |
| C 1 | 1 | 26 | 83.9 | C | .69 | .43 | .95 | .63 | C | 19.96 | 67.42 |
| 2 | 0 | 3 | 9.7 | | -.57 | -.35 | -.96 | -.61 | | 12.67 | 53.67 |
| TOTAL | | 31 | | | | | | | | | |

727 + 213

ITEM NUMBER 15

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEAN | TT MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 1 | 3.2 | | -.35 | -.17 | -.86 | -.43 | | 12.00 | 55.00 |
| C 1 | 1 | 25 | 80.6 | C | .67 | .49 | .95 | .70 | C | 20.12 | 68.00 |
| 2 | 0 | 5 | 16.1 | | -.55 | -.44 | -.83 | -.67 | | 14.40 | 54.40 |
| TOTAL | | 31 | | | | | | | | | |

409 + 383

TEST NO 1 ACHIEVEMENT MONITORING 9U SUBTEST 5 ADDITION ALGORITHM

ITEM NUMBER 16

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 1 | 3.2 | | -.35 | -.17 | -.86 | -.43 | | 12.00 | 55.00 |
| C 1 | 1 | 25 | 80.6 | C | .51 | .35 | .73 | .50 | C | 19.84 | 67.24 |
| 2 | 0 | 5 | 16.1 | | -.38 | -.29 | -.57 | -.44 | | 15.80 | 58.20 |
| TOTAL | | 31 | | | | | | | | | |

COEFFICIENTS OF CORRELATION

MEANS

155
+ 792

ITEM NUMBER 17

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 1 | 3.2 | | -.35 | -.17 | -.86 | -.43 | | 12.00 | 55.00 |
| C 1 | 1 | 27 | 87.1 | C | .68 | .40 | 1.06 | .62 | C | 19.85 | 67.07 |
| 2 | 0 | 3 | 9.7 | | -.57 | -.35 | -.98 | -.61 | | 12.67 | 53.67 |
| TOTAL | | 31 | | | | | | | | | |

COEFFICIENTS OF CORRELATION

MEANS

671
+ 176

ITEM NUMBER 18

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 1 | 3.2 | | -.35 | -.17 | -.86 | -.43 | | 12.00 | 55.00 |
| C 1 | 1 | 26 | 83.9 | C | .77 | .43 | 1.13 | .63 | C | 20.15 | 67.42 |
| 2 | 0 | 4 | 12.9 | | -.66 | -.38 | -1.05 | -.60 | | 12.75 | 54.75 |
| TOTAL | | 31 | | | | | | | | | |

COEFFICIENTS OF CORRELATION

MEANS

334
+ 484

ITEM NUMBER 19

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 1 | 3.2 | | -.35 | -.17 | -.86 | -.43 | | 12.00 | 55.00 |
| C 1 | 1 | 20 | 64.5 | C | .68 | .44 | .87 | .56 | C | 20.75 | 68.90 |
| 2 | 0 | 10 | 32.3 | | -.56 | -.38 | -.73 | -.50 | | 16.00 | 59.40 |
| TOTAL | | 31 | | | | | | | | | |

COEFFICIENTS OF CORRELATION

MEANS

479
+ 479

ITEM NUMBER 20

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 3 | 9.7 | | -.36 | -.27 | -.61 | -.47 | | 15.00 | 56.33 |
| C 1 | 1 | 24 | 77.4 | C | .61 | .35 | .84 | .49 | C | 20.12 | 67.46 |
| 2 | 0 | 4 | 12.9 | | -.45 | -.20 | -.71 | -.32 | | 14.75 | 59.75 |
| TOTAL | | 31 | | | | | | | | | |

COEFFICIENTS OF CORRELATION

MEANS

338
+ 595

TEST NO 1 ACHIEVEMENT MONITORING 9U SUBTEST 5 ADDITION ALGORITHM

ITEM NUMBER 21

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEAN | TT MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 4 | 12.9 | | -.37 | -.29 | -.58 | -.46 | | 15.50 | 57.25 |
| C 1 | 1 | 11 | 35.5 | C | .67 | .53 | .86 | .68 | C | 22.18 | 73.09 |
| 2 | 0 | 16 | 51.6 | | -.39 | -.31 | -.49 | -.39 | | 17.56 | 62.12 |
| TOTAL | | 31 | | | | | | | | | |

ITEM NUMBER 22

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEAN | TT MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 11 | 35.5 | | -.43 | -.34 | -.56 | -.43 | | 16.82 | 60.45 |
| C 1 | 1 | 8 | 25.8 | C | .58 | .60 | .79 | .81 | C | 22.50 | 76.37 |
| 2 | 0 | 12 | 38.7 | | -.10 | -.21 | -.12 | -.26 | | 18.50 | 62.58 |
| TOTAL | | 31 | | | | | | | | | |

ITEM NUMBER 23

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEAN | TT MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 14 | 45.2 | | -.68 | -.69 | -.86 | -.87 | | 16.21 | 57.14 |
| C 1 | 1 | 13 | 41.9 | C | .81 | .75 | 1.02 | .94 | C | 22.38 | 74.92 |
| 2 | 0 | 4 | 12.9 | | -.18 | -.08 | -.29 | -.12 | | 17.25 | 63.25 |
| TOTAL | | 31 | | | | | | | | | |

ITEM NUMBER 24

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEAN | TT MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 16 | 51.6 | | -.57 | -.61 | -.71 | -.77 | | 16.94 | 58.94 |
| C 1 | 1 | 8 | 25.8 | C | .60 | .66 | .81 | .89 | C | 22.62 | 77.50 |
| 2 | 0 | 7 | 22.6 | | .05 | .04 | .07 | .06 | | 19.29 | 66.29 |
| TOTAL | | 31 | | | | | | | | | |

115

864
+ 658

59
49
+ 37

21
33
+ 59

86
27
+ 98

TEST NO 1 ACHIEVEMENT MONITORING 90 SUBTEST 6 SUBTRACTION ALGORITHM

ITEM DESCRIPTIONS

ITEM NUMBER 1

| OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| C 1 | 1 | 29 | 93.5 | C | .03 | -.03 | .05 | -.05 | C | 12.03 | 65.31 |
| 2 | 0 | 2 | 6.5 | | -.03 | .03 | -.05 | .05 | | 11.50 | 66.50 |
| TOTAL | | 31 | | | | | | | | | |

87 - 51

ITEM NUMBER 2

| OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| C 1 | 1 | 27 | 87.1 | C | .24 | .21 | .37 | .32 | C | 12.44 | 66.26 |
| 2 | 0 | 4 | 12.9 | | -.24 | -.21 | -.38 | -.33 | | 9.00 | 59.50 |
| TOTAL | | 31 | | | | | | | | | |

79 - 43

ITEM NUMBER 3

| OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| C 1 | 1 | 30 | 96.8 | C | .15 | .09 | .29 | .18 | C | 12.13 | 65.57 |
| 2 | 0 | 1 | 3.2 | | -.15 | -.09 | -.37 | -.22 | | 8.00 | 60.00 |
| TOTAL | | 31 | | | | | | | | | |

98 - 25

ITEM NUMBER 4

| OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| C 1 | 1 | 29 | 93.5 | C | .00 | -.04 | .00 | -.07 | C | 12.00 | 65.28 |
| 2 | 0 | 2 | 6.5 | | .00 | .04 | .00 | .08 | | 12.00 | 67.00 |
| TOTAL | | 31 | | | | | | | | | |

915 - 411

ITEM NUMBER 5

| OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| C 1 | 1 | 29 | 93.5 | C | .30 | .23 | .53 | .40 | C | 12.38 | 66.03 |
| 2 | 0 | 2 | 6.5 | | -.30 | -.23 | -.58 | -.44 | | 6.50 | 56.00 |
| TOTAL | | 31 | | | | | | | | | |

293 - 140

119

TEST NO 1 ACHIEVEMENT MONITORING 9U SUBTEST 6 SUBTRACTION ALGORITHM

120

ITEM NUMBER 6

| OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| C 1 | 1 | 29 | 93.5 | C | .27 | .23 | .48 | .40 | C | 12.34 | 66.03 |
| 2 | 0 | 2 | 6.5 | | -.27 | -.23 | -.53 | -.44 | | 7.00 | 56.00 |
| TOTAL | | 31 | | | | | | | | | |

868 − 443

ITEM NUMBER 7

| OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| C 1 | 1 | 19 | 61.3 | C | .53 | .53 | .68 | .67 | C | 14.05 | 69.95 |
| 2 | 0 | 12 | 38.7 | | -.53 | -.53 | -.68 | -.67 | | 8.75 | 58.17 |
| TOTAL | | 31 | | | | | | | | | |

53 − 9

ITEM NUMBER 8

| OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 1 | 3.2 | | -.10 | -.17 | -.46 | -.43 | | 7.00 | 55.00 |
| C 1 | 1 | 19 | 61.3 | C | .64 | .52 | .82 | .66 | C | 14.47 | 69.84 |
| 2 | 0 | 11 | 35.5 | | -.59 | -.46 | -.76 | -.59 | | 8.18 | 58.64 |
| TOTAL | | 31 | | | | | | | | | |

34 − 6

ITEM NUMBER 9

| OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 2 | 6.5 | | -.24 | -.19 | -.48 | -.37 | | 7.50 | 57.50 |
| C 1 | 1 | 19 | 61.3 | C | .63 | .48 | .80 | .61 | C | 14.42 | 69.63 |
| 2 | 0 | 10 | 32.3 | | -.53 | -.40 | -.69 | -.52 | | 8.30 | 59.10 |
| TOTAL | | 31 | | | | | | | | | |

67 − 8

ITEM NUMBER 10

| OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 1 | 3.2 | | -.19 | -.17 | -.46 | -.43 | | 7.00 | 55.00 |
| C 1 | 1 | 18 | 58.1 | C | .68 | .64 | .85 | .81 | C | 14.78 | 71.28 |
| 2 | 0 | 12 | 38.7 | | -.62 | -.58 | -.78 | -.74 | | 8.25 | 57.42 |
| TOTAL | | 31 | | | | | | | | | |

70 − 39

156

157

TEST NO : ACHIEVEMENT MONITORING 90 SUBTEST 6 SUBTRACTION ALGORITHM

ITEM NUMBER 11

| OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| O | 0 | 1 | 3.2 | | -.19 | -.17 | -.46 | -.43 | | 7.00 | 55.00 |
| C 1 | 1 | 22 | 71.0 | C | .69 | .67 | .91 | .89 | C | 14.14 | 70.05 |
| 2 | 0 | 8 | 25.8 | | -.64 | -.63 | -.87 | -.85 | | 6.75 | 53.87 |
| TOTAL | | 31 | | | | | | | | | |

53 − 34

ITEM NUMBER 12

| OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| O | 0 | 3 | 9.7 | | -.25 | -.32 | -.43 | -.56 | | 8.33 | 54.67 |
| C 1 | 1 | 22 | 71.0 | C | .71 | .70 | .93 | .93 | C | 14.18 | 70.27 |
| 2 | 0 | 6 | 19.4 | | -.63 | -.57 | -.90 | -.82 | | 5.83 | 52.83 |
| TOTAL | | 31 | | | | | | | | | |

83 − 27

ITEM NUMBER 13

| OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| O | 0 | 4 | 12.9 | | -.28 | -.24 | -.44 | -.39 | | 8.50 | 58.50 |
| C 1 | 1 | 13 | 41.9 | C | .76 | .73 | .96 | .92 | C | 16.31 | 74.69 |
| 2 | 0 | 14 | 45.2 | | -.56 | -.56 | -.71 | -.70 | | 9.00 | 58.71 |
| TOTAL | | 31 | | | | | | | | | |

864 − 225

ITEM NUMBER 14

| OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| O | 0 | 4 | 12.9 | | -.28 | -.24 | -.44 | -.39 | | 8.50 | 58.50 |
| C 1 | 1 | 13 | 41.9 | C | .76 | .73 | .96 | .92 | C | 16.31 | 74.69 |
| 2 | 0 | 14 | 45.2 | | -.56 | -.56 | -.71 | -.70 | | 9.00 | 58.71 |
| TOTAL | | 31 | | | | | | | | | |

774 − 529

ITEM NUMBER 15

| OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| O | 0 | 6 | 19.4 | | -.34 | -.44 | -.49 | -.63 | | 8.67 | 55.67 |
| C 1 | 1 | 13 | 41.9 | C | .73 | .75 | .92 | .94 | C | 16.15 | 74.92 |
| 2 | 0 | 12 | 38.7 | | -.47 | -.40 | -.59 | -.51 | | 9.17 | 59.92 |
| TOTAL | | 31 | | | | | | | | | |

952 − 843

121

TEST NO 1 ACHIEVEME IT MONITORING 9U SUBTEST 6 SUBTRACTION ALGORITHM



ITEM NUMBER 16

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 5 | 16.1 | | -.33 | -.48 | -.49 | -.72 | | 8.40 | 53.60 |
| C 1 | 1 | 11 | 35.5 | C | .77 | .69 | .99 | .89 | C | 17.00 | 75.55 |
| 2 | 0 | 15 | 48.4 | | -.49 | -.31 | -.62 | -.39 | | 9.53 | 61.87 |
| TOTAL | | 31 | | | | | | | | | |

614 − 384

ITEM NUMBER 17

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 5 | 16.1 | | -.33 | -.48 | -.49 | -.72 | | 8.40 | 53.60 |
| C 1 | 1 | 10 | 32.3 | C | .81 | .74 | 1.06 | .96 | C | 17.70 | 77.00 |
| 2 | 0 | 16 | 51.6 | | -.52 | -.34 | -.65 | -.43 | | 9.56 | 61.81 |
| TOTAL | | 31 | | | | | | | | | |

929 − 536

ITEM NUMBER 18

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 8 | 25.8 | | -.18 | -.29 | -.28 | -.39 | | 10.50 | 60.12 |
| C 1 | 1 | 8 | 25.8 | C | .61 | .54 | .83 | .73 | C | 17.00 | 75.37 |
| 2 | 0 | 15 | 48.4 | | -.37 | -.22 | -.47 | -.28 | | 10.13 | 62.87 |
| TOTAL | | 31 | | | | | | | | | |

639 − 243

ITEM NUMBER 19

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 12 | 38.7 | | -.10 | -.21 | -.12 | -.27 | | 11.42 | 62.50 |
| C 1 | 1 | 3 | 9.7 | C | .56 | .52 | .97 | .90 | C | 20.33 | 82.67 |
| 2 | 0 | 16 | 51.6 | | -.24 | -.10 | -.30 | -.13 | | 10.87 | 64.31 |
| TOTAL | | 31 | | | | | | | | | |

824 − 628

ITEM NUMBER 20

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 14 | 45.2 | | -.09 | -.19 | -.12 | -.24 | | 11.50 | 63.07 |
| C 1 | 1 | 4 | 12.9 | C | .66 | .63 | 1.05 | 1.01 | C | 20.25 | 83.25 |
| 2 | 0 | 13 | 41.9 | | -.35 | -.24 | -.44 | -.30 | | 10.00 | 62.38 |
| TOTAL | | 31 | | | | | | | | | |

942 − 595

160

TEST NO 1 ACHIEVEMENT MONITORING 90 SUBTEST 6 SUBTRACTION ALGORITHM

ITEM NUMBER 21

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEAN | TT MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 15 | 48.4 | | -.17 | -.24 | -.22 | -.30 | | 11.13 | 62.73 |
| C 1 | 1 | 3 | 9.7 | C | .34 | .37 | .58 | .64 | C | 17.00 | 77.67 |
| 2 | 0 | 13 | 41.9 | | -.03 | .02 | -.03 | .02 | | 11.85 | 65.62 |
| TOTAL | | 31 | | | | | | | | | |

328 − 169

ITEM NUMBER 22

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEAN | TT MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 16 | 51.6 | | -.08 | -.14 | -.10 | -.18 | | 11.62 | 63.87 |
| C 1 | 1 | 2 | 6.5 | C | .49 | .45 | .95 | .88 | C | 21.00 | 84.00 |
| 2 | 0 | 13 | 41.9 | | -.16 | -.08 | -.20 | -.10 | | 11.08 | 64.38 |
| TOTAL | | 31 | | | | | | | | | |

710 − 469

ITEM NUMBER 23

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEAN | TT MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 17 | 54.8 | | -.16 | -.21 | -.20 | -.27 | | 11.29 | 63.29 |
| C 1 | 1 | 0 | .0 | C | .00 | .00 | .00 | .00 | C | .00 | .00 |
| 2 | 0 | 14 | 45.2 | | .16 | .21 | .20 | .27 | | 12.86 | 67.93 |
| TOTAL | | 31 | | | | | | | | | |

803 − 427

ITEM NUMBER 24

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEAN | TT MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 17 | 54.8 | | -.16 | -.21 | -.20 | -.27 | | 11.29 | 63.29 |
| C 1 | 1 | 0 | .0 | C | .00 | .00 | .00 | .00 | C | .00 | .00 |
| 2 | 0 | 14 | 45.2 | | .16 | .21 | .20 | .27 | | 12.86 | 67.93 |
| TOTAL | | 31 | | | | | | | | | |

600 − 212

123

TEST NO 1 ACHIEVEMENT MONITORING 9V SUBTEST 1 OBJECTIVES TEST



ITEM NUMBER 1

| OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT | ITEM DESCRIPTIONS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| C 1 | 1 | 20 | 93.3 | C | .47 | .10 | .83 | .17 | C | 12.29 | 69.00 | |
| 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | Numerousness |
| 3 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | Writes 0-99 |
| 4 | 0 | 2 | 6.7 | | -.47 | -.10 | -.91 | -.18 | | 9.50 | 65.50 | |
| TOTAL | | 30 | | | | | | | | | | |

ITEM NUMBER 2

| OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT | ITEM DESCRIPTIONS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| C 2 | 1 | 28 | 93.3 | C | .02 | .05 | .03 | .09 | C | 12.11 | 68.89 | Numerousness |
| 3 | 0 | 2 | 6.7 | | -.02 | -.05 | -.04 | -.10 | | 12.00 | 67.00 | Represents 0-99 |
| 4 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| TOTAL | | 30 | | | | | | | | | | |

ITEM NUMBER 3

| OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT | ITEM DESCRIPTIONS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| C 1 | 1 | 26 | 86.7 | C | .69 | .24 | 1.06 | .36 | C | 12.50 | 69.62 | |
| 2 | 0 | 1 | 3.3 | | -.39 | -.12 | -.95 | -.28 | | 9.00 | 63.00 | Problem Solving (A) |
| 3 | 0 | 3 | 10.0 | | -.55 | -.20 | -.94 | -.34 | | 9.67 | 63.33 | Comparison 11-15 |
| 4 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| TOTAL | | 30 | | | | | | | | | | |

ITEM NUMBER 4

| OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT | ITEM DESCRIPTIONS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | Problem Solving (A) |
| C 3 | 1 | 30 | 100.0 | C | .00 | .00 | .00 | .00 | C | 12.10 | 68.77 | Add-part part whole 0-99 |
| 4 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| TOTAL | | 30 | | | | | | | | | | |

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| C 3 | 1 | 30 | 100.0 | C | .00 | .00 | .00 | .00 | C | 12.10 | 68.77 |
| 4 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| TOTAL | | 30 | | | | | | | | | |

Problem Solving (B)
Subt-parr part whole-addend
11-15

ITEM NUMBER 12b

COEFFICIENTS OF CORRELATION — MEANS

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| C 1 | 1 | 24 | 80.0 | C | .43 | .36 | .61 | .51 | C | 12.42 | 70.42 |
| 2 | 0 | 1 | 3.3 | | -.01 | -.14 | -.03 | -.33 | | 12.00 | 62.00 |
| 3 | 0 | 3 | 10.0 | | -.40 | -.33 | -.69 | -.57 | | 10.33 | 59.67 |
| 4 | 0 | 2 | 6.7 | | -.20 | -.08 | -.39 | -.16 | | 11.00 | 66.00 |
| TOTAL | | 30 | | | | | | | | | |

Problem Solving (B)
Subt-join-addend 0-99



TEST NO 1 ACHIEVEMENT MONITORING 9V SUBTEST 1 OBJECTIVES TEST

ITEM NUMBER 57

COEFFICIENTS OF CORRELATION — MEANS

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 6 | 20.0 | | -.15 | -.11 | -.21 | -.15 | | 11.67 | 66.83 |
| C 2 | 1 | 19 | 63.3 | C | .57 | .18 | .73 | .20 | C | 12.74 | 69.84 |
| 3 | 0 | 2 | 6.7 | | -.29 | -.10 | -.56 | -.18 | | 10.50 | 65.50 |
| 4 | 0 | 3 | 10.0 | | -.48 | -.03 | -.81 | -.65 | | 10.00 | 58.00 |
| TOTAL | | 30 | | | | | | | | | |

Order, Place Value
Ordering 0-99

ITEM NUMBER 58

COEFFICIENTS OF CORRELATION — MEANS

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| C 1 | 1 | 11 | 36.7 | C | .37 | .29 | .48 | .37 | C | 12.82 | 72.27 |
| 2 | 0 | 6 | 20.0 | | -.03 | -.13 | -.05 | -.19 | | 12.00 | 66.33 |
| 3 | 0 | 4 | 13.3 | | -.23 | -.11 | -.36 | -.17 | | 11.25 | 66.25 |
| 4 | 0 | 7 | 23.3 | | -.25 | -.10 | -.35 | -.14 | | 11.43 | 67.14 |
| OTHER | 0 | 2 | 6.7 | | .07 | -.04 | .14 | -.07 | | 12.50 | 67.50 |
| TOTAL | | 30 | | | | | | | | | |

Order, Place Value
Place Value 0-99

ITEM NUMBER #1

| | OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEAN | TT MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| C | 2 | 1 | 29 | 96.7 | C | .01 | -.13 | .02 | -.24 | C | 12.10 | 68.55 |
| | 3 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| | 4 | 0 | 1 | 3.3 | | -.01 | .13 | -.03 | .31 | | 12.00 | 75.00 |
| | TOTAL | | 30 | | | | | | | | | |

Sentence Writing (A)
Subt-simple separating 11-15

ITEM NUMBER #10

| | OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEAN | TT MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 0 | 4 | 13.3 | | -.49 | -.11 | -.78 | -.17 | | 10.25 | 66.25 |
| | 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| C | 3 | 1 | 26 | 86.7 | C | .49 | .11 | .76 | .17 | C | 12.38 | 69.15 |
| | 4 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| | TOTAL | | 30 | | | | | | | | | |

Sentence Writing (A)
Subt-comparison 0-99

126

LERTAP 2.0 SUMMARY ITEM STATISTICS PAGE 18

TEST NO 1 ACHIEVEMENT MONITORING #V SUBTEST 1 OBJECTIVES TEST

ITEM NUMBER #11

| | OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEAN | TT MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 0 | 3 | 10.0 | | -.55 | -.20 | -.94 | -.34 | | 9.67 | 63.33 |
| | 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| C | 3 | 1 | 27 | 90.0 | C | .55 | .20 | .90 | .32 | C | 12.37 | 69.37 |
| | 4 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| | TOTAL | | 30 | | | | | | | | | |

Sentence Writing (B)
Subt-part part whole-addend 11-15

ITEM NUMBER #12

| | OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEAN | TT MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| C | 2 | 1 | 30 | 100.0 | C | .00 | .00 | .00 | .00 | C | 12.10 | 68.77 |
| | 3 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| | 4 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| | TOTAL | | 30 | | | | | | | | | |

Sentence Writing (B)
Add-simple joining 0-99

163

163

TEST NO 1 ACHIEVEMENT MONITORING 9V SUBTEST 1 OBJECTIVES TEST

ITEM NUMBER 13

| OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| C 1 | 1 | 29 | 96.7 | C | .39 | .12 | .76 | .23 | C | 12.21 | 68.97 | |
| 2 | 0 | 1 | 3.3 | | -.39 | -.12 | -.95 | -.28 | | 9.00 | 63.00 | Algorithms |
| 3 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | Addition Algorithm |
| 4 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| TOTAL | | 30 | | | | | | | | | | |

ITEM NUMBER 14

| OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 4 | 13.3 | | -.23 | -.13 | -.36 | -.20 | | 11.25 | 65.75 | |
| 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | Algorithms |
| C 3 | 1 | 26 | 86.7 | C | .23 | .13 | .35 | .20 | C | 12.23 | 69.23 | Subtraction Algorithm |
| 4 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| TOTAL | | 30 | | | | | | | | | | |

LERTAP 2.0

TEST NO 1 ACHIEVEMENT MONITORING 9V

SUMMARY ITEM STATISTICS

SUBTEST 2 SENTENCE WRITING FREE RESPONSE

ITEM NUMBER 1

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | MEANS TT | ITEM DESCRIPTIONS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | Sentence Writing |
| C 1 | 1 | 30 | 100.0 | C | .00 | .00 | .00 | .00 | C | 3.60 | 68.77 | Add-part part whole 11-15 |
| 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| TOTAL | | 30 | | | | | | | | | | |

ITEM NUMBER 2

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | MEANS TT | ITEM DESCRIPTIONS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | Sentence Writing |
| C 1 | 1 | 29 | 96.7 | C | .20 | -.21 | .39 | -.40 | C | 3.62 | 68.41 | Subt-simple separating 0-99 |
| 2 | 0 | 1 | 3.3 | | -.20 | .21 | -.49 | .50 | | 3.00 | 79.00 | |
| TOTAL | | 30 | | | | | | | | | | |

ITEM NUMBER 3

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | MEANS TT | ITEM DESCRIPTIONS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | Sentence Writing |
| C 1 | 1 | 28 | 93.3 | C | .53 | .26 | .93 | .45 | C | 3.68 | 69.39 | Subt-part part whole-addend |
| 2 | 0 | 2 | 6.7 | | -.53 | -.26 | -1.02 | -.50 | | 2.50 | 60.00 | 0-99 |
| TOTAL | | 30 | | | | | | | | | | |

ITEM NUMBER 4

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | MEANS TT | ITEM DESCRIPTIONS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | Sentence Writing |
| C 1 | 1 | 21 | 70.0 | C | .84 | .50 | 1.11 | .66 | C | 3.90 | 71.76 | Subt-join-addend 11-15 |
| 2 | 0 | 9 | 30.0 | | -.84 | -.50 | -1.11 | -.66 | | 3.89 | 61.78 | |
| TOTAL | | 30 | | | | | | | | | | |

TEST NO 1 ACHIEVEMENT MONITORING 9V SUBTEST 3 ADDITION FACTS

ITEM NUMBER 1

| OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT | ITEM DESCRIPTIONS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| C 1 | 1 | 29 | 96.7 | C | .69 | .34 | 1.33 | .66 | C | 11.00 | 69.34 | 3 + 1 |
| 2 | 0 | 1 | 3.3 | | -.69 | -.34 | -1.67 | -.83 | | 4.00 | 52.00 | |
| TOTAL | | 30 | | | | | | | | | | |

ITEM NUMBER 2

| OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 1 | 3.3 | | -.69 | -.34 | -1.67 | -.83 | | 4.00 | 52.00 | |
| C 1 | 1 | 29 | 96.7 | C | .69 | .34 | 1.33 | .66 | C | 11.00 | 69.34 | 2 + 5 |
| 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| TOTAL | | 30 | | | | | | | | | | |

ITEM NUMBER 3

| OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 1 | 3.3 | | -.69 | -.34 | -1.67 | -.83 | | 4.00 | 52.00 | |
| C 1 | 1 | 29 | 96.7 | C | .69 | .34 | 1.33 | .66 | C | 11.00 | 69.34 | 1 + 6 |
| 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| TOTAL | | 30 | | | | | | | | | | |

ITEM NUMBER 4

| OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| C 1 | 1 | 30 | 100.0 | C | .00 | .00 | .00 | .00 | C | 10.77 | 68.77 | 7 + 2 |
| 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| TOTAL | | 30 | | | | | | | | | | |

ITEM NUMBER 5

| OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 1 | 3.3 | | -.18 | -.02 | -.44 | -.04 | | 9.00 | 68.00 | |
| C 1 | 1 | 29 | 96.7 | C | .18 | .02 | .35 | .03 | C | 10.83 | 68.79 | 2 + 6 |
| 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| TOTAL | | 30 | | | | | | | | | | |

TEST NO 1 ACHIEVEMENT MONITORING 9V SUBTEST 3 ADDITION FACTS



ITEM NUMBER 6

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEANS | TT MEANS | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 1 | 3.3 | | -.16 | -.12 | -.44 | -.28 | | 9.00 | 63.00 | |
| C 1 | 1 | 29 | 96.7 | C | .18 | .12 | .35 | .23 | C | 10.83 | 68.97 | 3 + 5 |
| 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| TOTAL | | 30 | | | | | | | | | | |

ITEM NUMBER 7

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEANS | TT MEANS | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 2 | 6.7 | | -.77 | -.40 | -1.49 | -.78 | | 5.50 | 55.00 | |
| C 1 | 1 | 27 | 90.0 | C | .81 | .50 | 1.32 | .82 | C | 11.26 | 70.30 | 4 + 8 |
| 2 | 0 | 1 | 3.3 | | -.28 | -.28 | -.68 | -.68 | | 8.00 | 55.00 | |
| TOTAL | | 30 | | | | | | | | | | |

ITEM NUMBER 8

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEANS | TT MEANS | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 2 | 6.7 | | -.48 | -.36 | -.93 | -.69 | | 7.50 | 56.50 | |
| C 1 | 1 | 28 | 93.3 | C | .48 | .36 | .84 | .63 | C | 11.00 | 69.64 | 3 + 7 |
| 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| TOTAL | | 30 | | | | | | | | | | |

ITEM NUMBER 9

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEANS | TT MEANS | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 5 | 16.7 | | -.83 | -.47 | -1.23 | -.70 | | 7.40 | 59.20 | |
| C 1 | 1 | 23 | 76.7 | C | .75 | .43 | 1.03 | .59 | C | 11.52 | 70.91 | 5 + 9 |
| 2 | 0 | 2 | 6.7 | | -.04 | -.02 | -.08 | -.04 | | 10.50 | 68.00 | |
| TOTAL | | 30 | | | | | | | | | | |

ITEM NUMBER 10

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEANS | TT MEANS | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 5 | 16.7 | | -.73 | -.38 | -1.09 | -.57 | | 7.80 | 61.00 | |
| C 1 | 1 | 23 | 76.7 | C | .71 | .31 | .97 | .43 | C | 11.48 | 70.35 | 6 + 8 |
| 2 | 0 | 2 | 6.7 | | -.11 | .04 | -.22 | .07 | | 10.00 | 70.00 | |
| TOTAL | | 30 | | | | | | | | | | |

TEST NO 1 ACHIEVEMENT MONITORING 9V SUBTEST 3 ADDITION FACTS

ITEM NUMBER 11

| | OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | MEANS TT | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 0 | 5 | 16.7 | | -.63 | -.39 | -.94 | -.58 | | 8.20 | 60.80 | |
| C | 1 | 1 | 20 | 66.7 | C | .53 | .32 | .69 | .42 | C | 11.45 | 70.85 | 8 + 7 |
| | 2 | 0 | 5 | 16.7 | | -.04 | -.02 | -.06 | -.03 | | 10.60 | 68.40 | |
| | TOTAL | | 30 | | | | | | | | | | |

ITEM NUMBER 12

| | OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | MEANS TT | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 0 | 3 | 10.0 | | -.51 | -.25 | -.87 | -.43 | | 8.00 | 62.00 | |
| C | 1 | 1 | 27 | 90.0 | C | .51 | .25 | .82 | .40 | C | 11.07 | 69.52 | 4 + 9 |
| | 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| | TOTAL | | 30 | | | | | | | | | | |

TEST NO 1 ACHIEVEMENT MONITORING 9V SUBTEST 4 SUBTRACTION FACTS

132

ITEM NUMBER 1

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| C 1 | 1 | 30 | 100.0 | C | .00 | .00 | .00 | .00 | C | 10.37 | 68.77 |
| 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| TOTAL | | 30 | | | | | | | | | |

COEFFICIENTS OF CORRELATION — MEANS — ITEM DESCRIPTIONS: 7 - 1

ITEM NUMBER 2

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| C 1 | 1 | 30 | 100.0 | C | .00 | .00 | .00 | .00 | C | 10.37 | 68.77 |
| 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| TOTAL | | 30 | | | | | | | | | |

COEFFICIENTS OF CORRELATION — MEANS — ITEM DESCRIPTIONS: 8 - 4

ITEM NUMBER 3

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| C 1 | 1 | 30 | 100.0 | C | .00 | .00 | .00 | .00 | C | 10.37 | 68.77 |
| 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| TOTAL | | 30 | | | | | | | | | |

COEFFICIENTS OF CORRELATION — MEANS — ITEM DESCRIPTIONS: 9 - 5

ITEM NUMBER 4

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| C 1 | 1 | 30 | 100.0 | C | .00 | .00 | .00 | .00 | C | 10.37 | 68.77 |
| 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| TOTAL | | 30 | | | | | | | | | |

COEFFICIENTS OF CORRELATION — MEANS — ITEM DESCRIPTIONS: 7 - 4

ITEM NUMBER 5

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| C 1 | 1 | 30 | 100.0 | C | .00 | .00 | .00 | .00 | C | 10.37 | 68.77 |
| 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| TOTAL | | 30 | | | | | | | | | |

COEFFICIENTS OF CORRELATION — MEANS — ITEM DESCRIPTIONS: 8 - 6

TEST NO 1 ACHIEVEMENT MONITORING 9V SUBTEST 4 SUBTRACTION FACTS

ITEM NUMBER 6

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEAN | TT MEAN | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 1 | 3.3 | | -.42 | -.34 | -1.01 | -.83 | | 7.00 | 52.00 | |
| C 1 | 1 | 29 | 96.7 | C | .42 | .34 | .81 | .66 | C | 10.48 | 69.34 | 4 - 3 |
| 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| TOTAL | | 30 | | | | | | | | | | |

ITEM NUMBER 7

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEAN | TT MEAN | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| C 1 | 1 | 29 | 96.7 | C | -.08 | .06 | -.15 | .11 | C | 10.34 | 68.86 | 11 - 2 |
| 2 | 0 | 1 | 3.3 | | .08 | -.06 | .19 | -.14 | | 11.00 | 66.00 | |
| TOTAL | | 30 | | | | | | | | | | |

ITEM NUMBER 8

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEAN | TT MEAN | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 11 | 36.7 | | -.79 | -.35 | -1.01 | -.45 | | 8.82 | 64.55 | |
| C 1 | 1 | 17 | 56.7 | C | .64 | .39 | 1.06 | .49 | C | 11.47 | 71.88 | 13 - 8 |
| 2 | 0 | 2 | 6.7 | | -.16 | -.10 | -.30 | -.18 | | 9.50 | 65.50 | |
| TOTAL | | 30 | | | | | | | | | | |

ITEM NUMBER 9

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEAN | TT MEAN | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 12 | 40.0 | | -.79 | -.34 | -1.00 | -.44 | | 8.92 | 64.92 | |
| C 1 | 1 | 17 | 56.7 | C | .75 | .29 | .95 | .37 | C | 11.35 | 71.12 | 12 - 7 |
| 2 | 0 | 1 | 3.3 | | .08 | .13 | .19 | .31 | | 11.00 | 75.00 | |
| TOTAL | | 30 | | | | | | | | | | |

ITEM NUMBER 10

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEAN | TT MEAN | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 6 | 20.0 | | -.51 | -.19 | -.73 | -.27 | | 8.83 | 65.33 | |
| C 1 | 1 | 18 | 60.0 | C | .79 | .57 | 1.00 | .72 | C | 11.33 | 73.00 | 15 - 9 |
| 2 | 0 | 6 | 20.0 | | -.46 | -.51 | -.65 | -.73 | | 9.00 | 59.50 | |
| TOTAL | | 30 | | | | | | | | | | |

TEST NO 1 ACHIEVEMENT MONITORING 9V SUBTEST 4 SUBTRACTION FACTS

134

ITEM NUMBER 11

| OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 1 | 3.3 | | -.05 | .00 | -.11 | .01 | | 10.00 | 69.00 | |
| C 1 | 1 | 27 | 90.0 | C | .08 | -.06 | .13 | -.09 | C | 10.41 | 68.59 | 10 - 2 |
| 2 | 0 | 2 | 6.7 | | -.07 | .07 | -.13 | .13 | | 10.00 | 71.00 | |
| TOTAL | | 30 | | | | | | | | | | |

ITEM NUMBER 12

| OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 4 | 13.3 | | -.69 | -.33 | -1.08 | -.53 | | 7.75 | 61.00 | |
| C 1 | 1 | 24 | 80.0 | C | .27 | .34 | .80 | .49 | C | 10.79 | 70.33 | 16 - 7 |
| 2 | 0 | 2 | 6.7 | | .02 | -.10 | .05 | -.18 | | 10.50 | 65.50 | |
| TOTAL | | 30 | | | | | | | | | | |

TEST NO 1 ACHIEVEMENT MONITORING 9V SUBTEST 5 ADDITION ALGORITHM

ITEM DESCRIPTIONS

ITEM NUMBER 1

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEAN | TT MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| C 1 | 1 | 28 | 93.3 | C | .45 | .33 | .80 | .58 | C | 19.00 | 69.57 |
| 2 | 0 | 2 | 6.7 | | -.45 | -.33 | -.88 | -.64 | | 11.00 | 57.50 |
| TOTAL | | 30 | | | | | | | | | |

53 + 34

ITEM NUMBER 2

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEAN | TT MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| C 1 | 1 | 29 | 96.7 | C | .53 | .18 | 1.02 | .34 | C | 18.90 | 69.07 |
| 2 | 0 | 1 | 3.3 | | -.53 | -.18 | -1.28 | -.43 | | 6.00 | 60.00 |
| TOTAL | | 30 | | | | | | | | | |

30 + 21

ITEM NUMBER 3

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEAN | TT MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| C 1 | 1 | 27 | 90.0 | C | .34 | .20 | .55 | .32 | C | 18.96 | 69.37 |
| 2 | 0 | 3 | 10.0 | | -.34 | -.20 | -.58 | -.34 | | 14.00 | 63.33 |
| TOTAL | | 30 | | | | | | | | | |

27 + 62

ITEM NUMBER 4

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEAN | TT MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| C 1 | 1 | 29 | 96.7 | C | .49 | .32 | .94 | .62 | C | 18.86 | 69.31 |
| 2 | 0 | 1 | 3.3 | | -.49 | -.32 | -1.17 | -.78 | | 7.00 | 53.00 |
| TOTAL | | 30 | | | | | | | | | |

503 + 293

ITEM NUMBER 5

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEAN | TT MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .0 |
| C 1 | 1 | 27 | 90.0 | C | .42 | .24 | .67 | .38 | C | 19.07 | 69.48 |
| 2 | 0 | 3 | 10.0 | | -.42 | -.24 | -.71 | -.40 | | 13.00 | 62.33 |
| TOTAL | | 30 | | | | | | | | | |

265 + 314

135

TEST NO 1 ACHIEVEMENT MONITORING 9V SUBTEST 5 ADDITION ALGORITHM

136

ITEM NUMBER 6

| | OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | MEANS TT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| C | 1 | 1 | 29 | 96.7 | C | .49 | .32 | .94 | .62 | C | 18.86 | 69.31 |
| | 2 | 0 | 1 | 3.3 | | -.49 | -.32 | -1.17 | -.78 | | 7.00 | 53.00 |
| | TOTAL | | 30 | | | | | | | | | |

332 + 246

ITEM NUMBER 7

| | OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | MEANS TT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| C | 1 | 1 | 28 | 93.3 | C | .03 | .01 | .05 | .01 | C | 18.50 | 68.79 |
| | 2 | 0 | 2 | 6.7 | | -.03 | -.01 | -.05 | -.02 | | 18.00 | 68.50 |
| | TOTAL | | 30 | | | | | | | | | |

7 + 56

ITEM NUMBER 8

| | OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | MEANS TT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 0 | 1 | 3.3 | | -.53 | -.18 | -1.28 | -.43 | | 6.00 | 60.00 |
| C | 1 | 1 | 28 | 93.3 | C | .73 | .36 | 1.28 | .63 | C | 19.32 | 69.64 |
| | 2 | 0 | 1 | 3.3 | | -.49 | -.32 | -1.17 | -.78 | | 7.00 | 53.00 |
| | TOTAL | | 30 | | | | | | | | | |

68 + 8

ITEM NUMBER 9

| | OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | MEANS TT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 0 | 1 | 3.3 | | -.53 | -.18 | -1.28 | -.43 | | 6.00 | 60.00 |
| C | 1 | 1 | 27 | 90.0 | C | .31 | -.02 | .51 | -.03 | C | 18.93 | 68.70 |
| | 2 | 0 | 2 | 6.7 | | .00 | .15 | .00 | .30 | | 18.50 | 74.00 |
| | TOTAL | | 30 | | | | | | | | | |

79 + 7

ITEM NUMBER 10

| | OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | MEANS TT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 0 | 1 | 3.3 | | -.53 | -.18 | -1.28 | -.43 | | 6.00 | 60.00 |
| C | 1 | 1 | 27 | 90.0 | C | .47 | .41 | .76 | .66 | C | 19.15 | 70.00 |
| | 2 | 0 | 2 | 6.7 | | -.18 | -.36 | -.35 | -.69 | | 15.50 | 56.50 |
| | TOTAL | | 30 | | | | | | | | | |

29 + 64

189

TEST NO 1 ACHIEVEMENT MONITORING 9V SUBTEST 5 ADDITION ALGORITHM

ITEM NUMBER 11

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEAN | TT MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 1 | 3.3 | | -.53 | -.18 | -1.28 | -.43 | | 6.00 | 60.00 |
| C 1 | 1 | 28 | 93.3 | C | .49 | .13 | .85 | .22 | C | 19.04 | 69.07 |
| 2 | 0 | 1 | 3.3 | | -.15 | .00 | -.36 | .01 | | 15.00 | 69.00 |
| TOTAL | | 30 | | | | | | | | | |

45
+ 28

ITEM NUMBER 12

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEAN | TT MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 3 | 10.0 | | -.39 | -.21 | -.67 | -.36 | | 13.33 | 63.00 |
| C 1 | 1 | 18 | 60.0 | C | .40 | .19 | .50 | .24 | C | 19.89 | 70.17 |
| 2 | 0 | 9 | 30.0 | | -.17 | -.06 | -.22 | -.08 | | 17.33 | 67.89 |
| TOTAL | | 30 | | | | | | | | | |

77
+ 95

ITEM NUMBER 13

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEAN | TT MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| C 1 | 1 | 24 | 80.0 | C | .47 | .34 | .67 | .49 | C | 19.50 | 70.33 |
| 2 | 0 | 6 | 20.0 | | -.47 | -.34 | -.67 | -.49 | | 14.33 | 62.50 |
| TOTAL | | 30 | | | | | | | | | |

426
+ 458

ITEM NUMBER 14

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEAN | TT MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| C 1 | 1 | 23 | 76.7 | C | .63 | .50 | .87 | .69 | C | 20.00 | 71.30 |
| 2 | 0 | 7 | 23.3 | | -.63 | -.50 | -.88 | -.70 | | 13.43 | 60.43 |
| TOTAL | | 30 | | | | | | | | | |

239
+ 653

ITEM NUMBER 15

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEAN | TT MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| C 1 | 1 | 24 | 80.0 | C | .41 | .18 | .59 | .25 | C | 19.37 | 69.58 |
| 2 | 0 | 6 | 20.0 | | -.41 | -.18 | -.59 | -.26 | | 14.83 | 65.50 |
| TOTAL | | 30 | | | | | | | | | |

115
+ 875

137

TEST NO 1 ACHIEVEMENT MONITORING 9V SUBTEST 5 ADDITION ALGORITHM

ITEM NUMBER 16

COEFFICIENTS OF CORRELATION

MEANS

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 1 | 3.3 | | -.19 | -.22 | -.46 | -.53 | | 14.00 | 58.00 |
| C 1 | 1 | 26 | 86.7 | C | .60 | .40 | .92 | .61 | C | 19.50 | 70.19 |
| 2 | 0 | 3 | 10.0 | | -.57 | -.32 | -.97 | -.55 | | 11.00 | 60.00 |
| TOTAL | | 30 | | | | | | | | | |

174
+ 642

ITEM NUMBER 17

COEFFICIENTS OF CORRELATION

MEANS

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 1 | 3.3 | | -.19 | -.22 | -.46 | -.53 | | 14.00 | 58.00 |
| C 1 | 1 | 26 | 86.7 | C | .67 | .36 | 1.02 | .55 | C | 19.62 | 70.04 |
| 2 | 0 | 3 | 10.0 | | -.64 | -.27 | -1.10 | -.46 | | 10.00 | 61.33 |
| TOTAL | | 30 | | | | | | | | | |

583
+ 241

ITEM NUMBER 18

COEFFICIENTS OF CORRELATION

MEANS

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 1 | 3.3 | | -.19 | -.22 | -.46 | -.53 | | 14.00 | 58.00 |
| C 1 | 1 | 24 | 80.0 | C | .59 | .41 | .83 | .58 | C | 19.75 | 70.62 |
| 2 | 0 | 5 | 16.7 | | -.54 | -.33 | -.80 | -.49 | | 13.20 | 62.00 |
| TOTAL | | 30 | | | | | | | | | |

186
+ 570

ITEM NUMBER 19

COEFFICIENTS OF CORRELATION

MEANS

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 1 | 3.3 | | -.19 | -.22 | -.46 | -.53 | | 14.00 | 58.00 |
| C 1 | 1 | 19 | 63.3 | C | .76 | .58 | .97 | .74 | C | 21.00 | 72.79 |
| 2 | 0 | 10 | 33.3 | | -.70 | -.51 | -.91 | -.66 | | 14.10 | 62.20 |
| TOTAL | | 30 | | | | | | | | | |

263
+ 459

ITEM NUMBER 20

COEFFICIENTS OF CORRELATION

MEANS

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 5 | 16.7 | | -.48 | -.47 | -.71 | -.70 | | 13.80 | 59.20 |
| C 1 | 1 | 20 | 66.7 | C | .60 | .58 | 1.04 | .75 | C | 20.95 | 72.50 |
| 2 | 0 | 5 | 16.7 | | -.54 | -.26 | -.80 | -.39 | | 13.20 | 63.40 |
| TOTAL | | 30 | | | | | | | | | |

359
+ 265

TEST NO 1 ACHIEVEMENT MONITORING 9V SUBTEST 5 ADDITION ALGORITHM

ITEM NUMBER 21

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEAN | TT MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 6 | 20.0 | | -.46 | -.36 | -.66 | -.52 | | 14.50 | 62.17 |
| C 1 | 1 | 12 | 40.0 | C | .67 | .48 | .85 | .60 | C | 22.08 | 74.08 |
| 2 | 0 | 12 | 40.0 | | -.30 | -.18 | -.39 | -.23 | | 16.83 | 66.75 |
| TOTAL | | 30 | | | | | | | | | |

ITEM NUMBER 22

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEAN | TT MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 8 | 26.7 | | -.37 | -.19 | -.50 | -.26 | | 15.75 | 65.87 |
| C 1 | 1 | 10 | 33.3 | C | .52 | .40 | .68 | .52 | C | 21.70 | 73.90 |
| 2 | 0 | 12 | 40.0 | | -.16 | -.21 | -.21 | -.27 | | 17.58 | 66.42 |
| TOTAL | | 30 | | | | | | | | | |

ITEM NUMBER 23

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEAN | TT MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 12 | 40.0 | | -.35 | -.24 | -.44 | -.30 | | 16.58 | 66.08 |
| C 1 | 1 | 15 | 50.0 | C | .53 | .32 | .67 | .40 | C | 20.80 | 71.67 |
| 2 | 0 | 3 | 10.0 | | -.31 | -.14 | -.54 | -.24 | | 14.33 | 65.00 |
| TOTAL | | 30 | | | | | | | | | |

ITEM NUMBER 24

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEAN | TT MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 15 | 50.0 | | -.20 | -.43 | -.25 | -.54 | | 17.60 | 64.87 |
| C 1 | 1 | 6 | 20.0 | C | .42 | .48 | .60 | .68 | C | 22.17 | 77.50 |
| 2 | 0 | 9 | 30.0 | | -.15 | .05 | -.20 | .06 | | 17.44 | 69.44 |
| TOTAL | | 30 | | | | | | | | | |

767
+ 434

19
64
+ 58

67
25
+ 22

58
98
+ 85

TEST NO 1 ACHIEVEMENT MONITORING 9V SUBTEST 6 SUBTRACTION ALGORI M

140

ITEM NUMBER 1

| | OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| C | 1 | 1 | 28 | 93.3 | C | .24 | .11 | .43 | .19 | C | 13.75 | 69.04 |
| | 2 | 0 | 2 | 6.7 | | -.24 | -.11 | -.47 | -.21 | | 9.50 | 65.00 |
| | TOTAL | | 30 | | | | | | | | | |

ITEM DESCRIPTIONS: 67 - 42

ITEM NUMBER 2

| | OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| C | 1 | 1 | 29 | 96.7 | C | .58 | .38 | 1.11 | .74 | C | 13.93 | 69.41 |
| | 2 | 0 | 1 | 3.3 | | -.58 | -.38 | -1.39 | -.92 | | .00 | 50.00 |
| | TOTAL | | 30 | | | | | | | | | |

ITEM DESCRIPTIONS: 56 - 25

ITEM NUMBER 3

| | OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| C | 1 | 1 | 29 | 96.7 | C | .58 | .38 | 1.11 | .74 | C | 13.93 | 69.41 |
| | 2 | 0 | 1 | 3.3 | | -.58 | -.38 | -1.39 | -.92 | | .00 | 50.00 |
| | TOTAL | | 30 | | | | | | | | | |

ITEM DESCRIPTIONS: 88 - 76

ITEM NUMBER 4

| | OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| C | 1 | 1 | 29 | 96.7 | C | .58 | .38 | 1.11 | .74 | | 13.93 | 69.41 |
| | 2 | 0 | 1 | 3.3 | | -.58 | -.38 | -1.39 | -.92 | | .00 | 50.00 |
| | TOTAL | | 30 | | | | | | | | | |

ITEM DESCRIPTIONS: 698 - r57

ITEM NUMBER 5

| | OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| C | 1 | 1 | 25 | 83.3 | C | .17 | .17 | .26 | .26 | C | 13.80 | 69.48 |
| | 2 | 0 | 5 | 16.7 | | -.17 | -.17 | -.26 | -.26 | | 11.80 | 65.20 |
| | TOTAL | | 30 | | | | | | | | | |

ITEM DESCRIPTIONS: 482 - 231



197

TEST NO 1 ACHIEVEMENT MONITORING 9V

SUBTEST 6 SUBTRACTION ALGORITHM

ITEM NUMBER 6

| | OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| C | 1 | 1 | 29 | 96.7 | C | .58 | .38 | 1.11 | .74 | C | 13.93 | 69.41 |
| | 2 | 0 | 1 | 3.3 | | -.58 | -.38 | -1.39 | -.92 | | .00 | 50.00 |
| | TOTAL | | 30 | | | | | | | | | |

985
- 265

ITEM NUMBER 7

| | OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 0 | 1 | 3.3 | | -.15 | -.12 | -.36 | -.28 | | 10.00 | 63.00 |
| C | 1 | 1 | 23 | 76.7 | C | .53 | .25 | .73 | .35 | C | 14.74 | 70.04 |
| | 2 | 0 | 6 | 20.0 | | -.50 | -.22 | -.71 | -.31 | | 9.17 | 64.83 |
| | TOTAL | | 30 | | | | | | | | | |

32
- 5

ITEM NUMBER 8

| | OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| C | 1 | 1 | 24 | 80.0 | C | .73 | .66 | 1.03 | .94 | C | 15.04 | 71.79 |
| | 2 | 0 | 6 | 20.0 | | -.73 | -.66 | -1.04 | -.95 | | 7.17 | 56.00 |
| | TOTAL | | 30 | | | | | | | | | |

74
- 8

ITEM NUMBER 9

| | OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| C | 1 | 1 | 26 | 86.7 | C | .43 | .17 | .65 | .26 | C | 14.19 | 69.38 |
| | 2 | 0 | 4 | 13.3 | | -.43 | -.17 | -.67 | -.27 | | 8.75 | 64.75 |
| | TOTAL | | 30 | | | | | | | | | |

61
- 5

ITEM NUMBER 10

| | OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| C | 1 | 1 | 26 | 86.7 | C | .49 | .18 | .76 | .28 | C | 14.31 | 69.42 |
| | 2 | 0 | 4 | 13.3 | | -.49 | -.18 | -.76 | -.29 | | 8.00 | 64.50 |
| | TOTAL | | 30 | | | | | | | | | |

72
- 28

TEST NO 1 ACHIEVEMENT MONITORING 9V SUBTEST 6 SUBTRACTION ALGORITHM

142

ITEM NUMBER 11

| OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| C 1 | 1 | 22 | T3.3 | C | .39 | .24 | .53 | .32 | C | 14.50 | T0.09 |
| 2 | 0 | 8 | 26.T | | -.39 | -.24 | -.53 | -.32 | | 10.62 | 65.12 |
| TOTAL | | 30 | | | | | | | | | |

83 − 67

ITEM NUMBER 12

| OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 1 | 3.3 | | -.19 | -.28 | -.46 | -.68 | | 9.00 | 55.00 |
| C 1 | 1 | 22 | T3.3 | C | .62 | .41 | .83 | .56 | C | 15.09 | T1.05 |
| 2 | 0 | T | 23.3 | | -.5T | -.3I | -.T8 | -.43 | | 9.00 | 63.5T |
| TOTAL | | 30 | | | | | | | | | |

85 − 59

ITEM NUMBER 13

| OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 4 | 13.3 | | -.25 | -.32 | -.39 | -.51 | | 10.T5 | 61.25 |
| C 1 | 1 | 18 | 60.0 | C | .68 | .T4 | .83 | .94 | C | 15.T8 | T4.28 |
| 2 | 0 | 8 | 26.T | | -.53 | -.5T | -.72 | -.T7 | | 9.62 | 60.12 |
| TOTAL | | 30 | | | | | | | | | |

256 − 138

ITEM NUMBER 14

| OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 5 | 16.T | | -.25 | -.30 | -.38 | -.45 | | 11.00 | 62.60 |
| C 1 | 1 | 16 | S3.3 | C | .67 | .65 | .84 | .82 | C | 16.19 | T4.31 |
| 2 | 0 | 9 | 30.0 | | -.52 | -.46 | -.69 | -.61 | | 10.00 | 62.33 |
| TOTAL | | 30 | | | | | | | | | |

388 − 269

ITEM NUMBER 15

| OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB- | B-ST | B-TT | | MEANS ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 7 | 23.3 | | -.30 | -.43 | -.41 | -.59 | | 11.14 | 61.T1 |
| C 1 | 1 | 14 | 46.T | C | .65 | .68 | .82 | .86 | C | 16.50 | T5.43 |
| 2 | 0 | 9 | 30.0 | | -.44 | -.35 | -.58 | -.46 | | 10.56 | 63.89 |
| TOTAL | | 30 | | | | | | | | | |

913 − 408

200

201

TEST NO 1 ACHIEVEMENT MONITORING '9V SUBTEST 6 SUBTRACTION ALGORITHM

ITEM NUMBER 16

| OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 8 | 26.7 | | -.26 | -.33 | -.34 | -.45 | | 11.62 | 63.75 |
| C 1 | 1 | 12 | 40.0 | C | .74 | .70 | .94 | .89 | C | 17.42 | 76.58 |
| 2 | 0 | 10 | 33.3 | | -.53 | -.42 | -.69 | -.54 | | 10.20 | 63.40 |
| TOTAL | | 30 | | | | | | | | | |

846 − 393

ITEM NUMBER 17

| OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 10 | 33.3 | | -.21 | -.32 | -.27 | -.41 | | 12.20 | 64.70 |
| C 1 | 1 | 9 | 30.0 | C | .68 | .58 | .90 | .77 | C | 18.00 | 76.89 |
| 2 | 0 | 11 | 36.7 | | -.45 | -.25 | -.77 | -.31 | | 10.91 | 65.82 |
| TOTAL | | 30 | | | | | | | | | |

929 − 743

ITEM NUMBER 18

| OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 14 | 46.7 | | -.33 | -.28 | -.42 | -.36 | | 11.93 | 66.00 |
| C 1 | 1 | 9 | 30.0 | C | .68 | .61 | .90 | .80 | C | 18.00 | 77.22 |
| 2 | 0 | 7 | 23.3 | | -.35 | -.32 | -.48 | -.45 | | 10.71 | 63.43 |
| TOTAL | | 30 | | | | | | | | | |

726 − 186

ITEM NUMBER 19

| OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 17 | 56.7 | | -.53 | -.49 | -.66 | -.62 | | 11.47 | 64.82 |
| C 1 | 1 | 4 | 13.3 | C | .45 | .43 | .72 | .68 | C | 18.50 | 78.75 |
| 2 | 0 | 9 | 30.0 | | .23 | .22 | .30 | .28 | | 15.00 | 71.78 |
| TOTAL | | 30 | | | | | | | | | |

623 − 334

ITEM NUMBER 20

| OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 19 | 63.3 | | -.40 | -.32 | -.51 | -.40 | | 12.16 | 66.58 |
| C 1 | 1 | 5 | 16.7 | C | .53 | .51 | .79 | .76 | C | 18.60 | 79.20 |
| 2 | 0 | 6 | 20.0 | | -.02 | -.10 | -.02 | -.14 | | 13.33 | 67.00 |
| TOTAL | | 30 | | | | | | | | | |

872 − 586

TEST NO 1 ACHIEVEMENT MONITORING 9V SUBTEST 6 SUBTRACTION ALGORITHM

144

ITEM NUMBER 21

| OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PO-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 22 | 73.3 | | -.20 | -.12 | -.26 | -.16 | | 12.95 | 68.09 |
| C 1 | 1 | 2 | 6.7 | C | .31 | .29 | .60 | .55 | C | 18.50 | 78.50 |
| 2 | 0 | 6 | 20.0 | | .02 | -.04 | .03 | -.06 | | 13.67 | 68.00 |
| TOTAL | | 30 | | | | | | | | | |

436 − 337

ITEM NUMBER 22

| OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 21 | 70.0 | | -.26 | -.18 | -.35 | -.23 | | 12.71 | 67.71 |
| C 1 | 1 | 3 | 10.0 | C | .42 | .40 | .73 | .68 | C | 19.00 | 79.67 |
| 2 | 0 | 6 | 20 0 | | -.02 | -.10 | -.02 | -.14 | | 13.33 | 67.00 |
| TOTAL | | 30 | | | | | | | | | |

730 − 438

ITEM NUMBER 23

| OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 23 | 76.7 | | -.14 | -.05 | -.19 | -.07 | | 13.13 | 68.52 |
| C 1 | 1 | 0 | .0 | C | .00 | .00 | .00 | .00 | C | .00 | .00 |
| 2 | 0 | 7 | 23.3 | | .14 | .05 | .19 | .07 | | 14.57 | 69.87 |
| TOTAL | | 30 | | | | | | | | | |

504 − 227

ITEM NUMBER 24

| OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 22 | 73.3 | | -.21 | -.11 | -.29 | -.14 | | 12.91 | 68.18 |
| C 1 | 1 | 0 | .0 | C | .00 | .00 | .00 | .00 | C | .00 | .00 |
| 2 | 0 | 8 | 26.7 | | .21 | .11 | .29 | .14 | | 15.00 | 70.37 |
| TOTAL | | 30 | | | | | | | | | |

600 − 481

TEST NO 1 ACHIEVEMENT MONITORING 9W SUBTEST 1 OBJECTIVES TEST

ITEM NUMBER 1

| OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT | ITEM DESCRIPTIONS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | Numerousness |
| C 3 | 1 | 29 | 100.0 | C | .00 | .00 | .00 | .00 | C | 11.55 | 66.00 | Writes 0-99 |
| 4 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| TOTAL | | 29 | | | | | | | | | | |

ITEM NUMBER 2

| OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| C 1 | 1 | 27 | 93.1 | C | .57 | .27 | 1.00 | .48 | C | 11.78 | 66.70 | |
| 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | Numerousness |
| 3 | 0 | 1 | 3.4 | | -.33 | -.16 | -.79 | -.38 | | 9.00 | 58.00 | Represents 0-99 |
| 4 | 0 | 1 | 3.4 | | -.46 | -.22 | -1.11 | -.53 | | 8.00 | 55.00 | |
| TOTAL | | 29 | | | | | | | | | | |

ITEM NUMBER 3

| OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | Problem Solving (A) |
| C 3 | 1 | 29 | 100.0 | C | .00 | .00 | .00 | .00 | C | 11.55 | 66.00 | Add-part part whole 11-15 |
| 4 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| TOTAL | | 29 | | | | | | | | | | |

ITEM NUMBER 4

| OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 5 | 17.2 | | -.42 | -.18 | -.63 | -.27 | | 10.20 | 62.20 | |
| C 2 | 1 | 19 | 65.5 | C | .63 | .37 | .81 | .48 | C | 12.21 | 68.53 | Problem Solving (A) |
| 3 | 0 | 1 | 3.4 | | .06 | -.50 | .14 | -1.20 | | 12.00 | 41.00 | Subt-simple separating 0-99 |
| 4 | 0 | 4 | 13.8 | | -.43 | -.04 | -.67 | -.07 | | 10.00 | 65.00 | |
| TOTAL | | 29 | | | | | | | | | | |

ITEM NUMBER 11

| | OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| | 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| C | 3 | 1 | 29 | 100.0 | C | .00 | .00 | .00 | .00 | C | 11.55 | 66.00 |
| | 4 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| | TOTAL | | 29 | | | | | | | | | |

Problem Solving (B)
Add-simple joining 11-15

ITEM NUMBER 12

| | OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| C | 1 | 1 | 20 | 69.0 | C | .61 | .23 | .80 | .30 | C | 12.15 | 67.45 |
| | 2 | 0 | 4 | 13.8 | | -.22 | -.17 | -.35 | -.27 | | 10.75 | 62.00 |
| | 3 | 0 | 2 | 6.9 | | -.29 | .03 | -.56 | .06 | | 10.00 | 67.00 |
| | 4 | 0 | 3 | 10.3 | | -.44 | -.18 | -.75 | -.31 | | 9.67 | 61.00 |
| | TOTAL | | 29 | | | | | | | | | |

Problem Solving (B)
Subt-part part whole-addend
0-99

146

LEATAP 2.0 SUMMARY ITEM STATISTICS PAGE 17

TEST NO 1 ACHIEVEMENT MONITORING 9W SUBTEST 1 OBJECTIVES TEST

ITEM NUMBER 7

| | OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| C | 1 | 1 | 29 | 100.0 | C | .00 | .00 | .00 | .00 | C | 11.55 | 66.00 |
| | 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| | 3 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| | 4 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| | TOTAL | | 29 | | | | | | | | | |

Order, Place Value
Ordering 0-99

ITEM NUMBER 8

| | OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 0 | 6 | 20.7 | | -.19 | .14 | -.28 | .19 | | 11.00 | 68.50 |
| | 2 | 0 | 15 | 51.7 | | -.01 | -.10 | -.02 | -.13 | | 11.53 | 65.07 |
| C | 3 | 1 | 3 | 10.3 | C | .34 | .16 | .57 | .26 | C | 13.00 | 70.33 |
| | 4 | 0 | 5 | 17.2 | | -.05 | -.14 | -.07 | -.20 | | 11.40 | 63.20 |
| | TOTAL | | 29 | | | | | | | | | |

Order, Place Value
Place Value 0-99

208

209

| | | | | | COEFFICIENTS OF CORRELATION | | | | | MEANS | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST | TT | |
| 1 | 0 | 4 | 13.8 | | -.43 | -.16 | -.67 | -.25 | | 10.00 | 62.25 | |
| C 2 | 1 | 25 | 86.2 | C | .43 | .16 | .65 | .24 | C | 11.80 | 66.60 | Sentence Writing (A) |
| 3 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | Sunt-comparison 11-15 |
| 4 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| TOTAL | | 29 | | | | | | | | | | |

ITEM NUMBER #10

| | | | | | COEFFICIENTS OF CORRELATION | | | | | MEANS | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST | TT | |
| 1 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| 2 | 0 | 1 | 3.4 | | -.46 | -.22 | -1.11 | -.53 | | 9.00 | 55.00 | Sentence Writing (A) |
| C 3 | 1 | 28 | 96.6 | C | .46 | .22 | .89 | .42 | C | 11.68 | 66.39 | Add-part part whole 0-99 |
| 4 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| TOTAL | | 29 | | | | | | | | | | |



TEST NO 1 ACHIEVEMENT MONITORING 9W SUBTEST 1 OBJECTIVES TEST

ITEM NUMBER #11

| | | | | | COEFFICIENTS OF CORRELATION | | | | | MEANS | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST | TT | |
| 1 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | Sentence Writing (B) |
| C 3 | 1 | 29 | 100.0 | C | .00 | .00 | .00 | .00 | C | 11.55 | 66.00 | Add-simple joining 11-15 |
| 4 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| TOTAL | | 29 | | | | | | | | | | |

ITEM NUMBER #12

| | | | | | COEFFICIENTS OF CORRELATION | | | | | MEANS | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST | TT | |
| 1 | 0 | 3 | 10.3 | | -.13 | -.06 | -.22 | -.10 | | 11.00 | 64.33 | |
| C 2 | 1 | 18 | 62.1 | C | .39 | .17 | .60 | .22 | C | 12.00 | 67.28 | Sentence Writing (B) |
| 3 | 0 | 4 | 13.8 | | -.15 | -.08 | -.24 | -.13 | | 11.00 | 64.00 | Subt-join-addend 0-99 |
| 4 | 0 | 3 | 10.3 | | -.21 | -.10 | -.35 | -.16 | | 10.67 | 63.33 | |
| OTHER | 0 | 1 | 3.4 | | -.20 | -.04 | -.48 | -.10 | | 10.00 | 64.00 | |
| TOTAL | | 29 | | | | | | | | | | |

TEST NO 1 ACHIEVEMENT MONITORING 9W SUBTEST 1 OBJECTIVES TEST



ITEM NUMBER 13

| OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 1 | 3.4 | | -.20 | -.14 | -.48 | -.34 | | 10.00 | 59.00 | |
| C 2 | 1 | 28 | 96.6 | C | .20 | .14 | .39 | .27 | C | 11.61 | 66.25 | Algorithms |
| 3 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | Addition Algorithm |
| 4 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| TOTAL | | 29 | | | | | | | | | | |

ITEM NUMBER 14

| OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| C 1 | 1 | 22 | 75.9 | C | .38 | .18 | .52 | .24 | C | 11.86 | 66.95 | |
| 2 | 0 | 5 | 17.2 | | -.17 | -.04 | -.26 | -.06 | | 11.00 | 65.20 | Algorithms |
| 3 | 0 | 1 | 3.4 | | -.07 | -.12 | -.17 | -.29 | | 11.00 | 60.00 | Subtraction Algorithm |
| 4 | 0 | 1 | 3.4 | | -.46 | -.22 | -1.11 | -.53 | | 8.00 | 55.00 | |
| TOTAL | | 29 | | | | | | | | | | |

LERTAP 2.0 SUMMARY ITEM STATISTICS

TEST NO : ACHIEVEMENT MONITORING 9W SUBTEST 2 SENTENCE WRITING FREE RESPONSE

ITEM NUMBER 1

| | OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEAN | TT MEAN | ITEM DESCRIPTIONS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 0 | [illegible] | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| C | 1 | 1 | 2[illegible] | 100.0 | C | .00 | .00 | .00 | .00 | C | 3.62 | 66.00 | Sentence Writing |
| | 2 | 0 | 0 | .[illegible] | | .00 | .00 | .00 | .00 | | .00 | .00 | Subt-simple separating 11-15 |
| | TOTAL | | 29 | | | | | | | | | | |

ITEM NUMBER 2

| | OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEAN | TT MEAN | ITEM DESCRIPTIONS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| C | 1 | 1 | 23 | 79.3 | C | .92 | .28 | 1.29 | .39 | C | 3.96 | 67.35 | Sentence Writing |
| | 2 | 0 | 6 | 20.7 | | -.92 | -.28 | -1.30 | -.40 | | 2.33 | 60.83 | Subt-comparison 0-99 |
| | TOTAL | | 29 | | | | | | | | | | |

ITEM NUMBER 3

| | OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEAN | TT MEAN | ITEM DESCRIPTIONS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | Sentence Writing |
| C | 1 | 1 | 29 | 100.0 | C | .00 | .00 | .00 | .00 | C | 3.62 | 66.00 | Add-simple joining 0-99 |
| | 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| | TOTAL | | 29 | | | | | | | | | | |

ITEM NUMBER 4

| | OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEAN | TT MEAN | ITEM DESCRIPTIONS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | Sentence Writing |
| C | 1 | 1 | 24 | 82.8 | C | .91 | .08 | 1.32 | .11 | C | 3.92 | 66.33 | Subt-part part whole-addend |
| | 2 | 0 | 5 | 17.2 | | -.91 | -.08 | -1.34 | -.11 | | 2.20 | 64.40 | 11-15 |
| | TOTAL | | 29 | | | | | | | | | | |

TEST NO 1 ACHIEVEMENT MONITORING 9W SUBTEST 3 ADDITION FACTS

150

ITEM NUMBER 1

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEANS | TT MEANS | ITEM DESCRIPTIONS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 1 | 3.4 | | -.09 | -.12 | -.20 | -.29 | | 11.00 | 60.00 | |
| C 1 | 1 | 27 | 93.1 | C | .50 | .25 | .88 | .43 | C | 11.63 | 66.63 | 2 + 4 |
| 2 | 0 | 1 | 3.4 | | -.61 | -.22 | -1.47 | -.53 | | 8.00 | 55.00 | |
| TOTAL | | 29 | | | | | | | | | | |

ITEM NUMBER 2

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEANS | TT MEANS | ITEM DESCRIPTIONS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| C 1 | 1 | 29 | 100.0 | C | .00 | .00 | .00 | .00 | C | 11.48 | 66.00 | 6 + 3 |
| 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| TOTAL | | 29 | | | | | | | | | | |

ITEM NUMBER 3

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEANS | TT MEANS | ITEM DESCRIPTIONS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| C 1 | 1 | 29 | 100.0 | C | .00 | .00 | .00 | .00 | C | 11.48 | 66.00 | 5 + 2 |
| 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| TOTAL | | 29 | | | | | | | | | | |

ITEM NUMBER 4

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEANS | TT MEANS | ITEM DESCRIPTIONS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| C 1 | 1 | 29 | 100.0 | C | .00 | .00 | .00 | .00 | C | 11.48 | 66.00 | 2 + 3 |
| 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| TOTAL | | 29 | | | | | | | | | | |

ITEM NUMBER 5

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEANS | TT MEANS | ITEM DESCRIPTIONS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| C 1 | 1 | 29 | 100.0 | C | .00 | .00 | .00 | .00 | C | 11.48 | 66.00 | 5 + 0 |
| 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| TOTAL | | 29 | | | | | | | | | | |

218

217

TEST NO 1 ACHIEVEMENT MONITORING 9W SUBTEST 3 ADDITION FACTS

ITEM NUMBER 6

| | OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST | TT | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| C | 1 | 1 | 29 | 100.0 | C | .00 | .00 | .00 | .00 | C | 11.48 | 66.00 | 1 + 3 |
| | 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| | TOTAL | | 29 | | | | | | | | | | |

ITEM NUMBER 7

| | OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST | TT | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| C | 1 | 1 | 29 | 100.0 | C | .00 | .00 | .00 | .00 | C | 11.48 | 66.00 | 9 + 2 |
| | 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| | TOTAL | | 29 | | | | | | | | | | |

ITEM NUMBER 8

| | OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST | TT | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| C | 1 | 1 | 29 | 100.0 | C | .00 | .00 | .00 | .00 | C | 11.48 | 66.00 | 6 + 6 |
| | 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| | TOTAL | | 29 | | | | | | | | | | |

ITEM NUMBER 9

| | OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST | TT | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 0 | 1 | 3.4 | | -.61 | -.50 | -1.47 | -1.20 | | 8.00 | 41.00 | |
| C | 1 | 1 | 28 | 96.6 | C | .61 | .50 | 1.18 | .96 | C | 11.61 | 66.89 | 4 + 7 |
| | 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| | TOTAL | | 29 | | | | | | | | | | |

ITEM NUMBER 10

| | OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST | TT | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 0 | 4 | 13.8 | | -.83 | -.47 | -1.31 | -.73 | | 9.25 | 55.00 | |
| C | 1 | 1 | 25 | 86.2 | C | .83 | .47 | 1.27 | .71 | C | 11.84 | 67.76 | 7 + 6 |
| | 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| | TOTAL | | 29 | | | | | | | | | | |

TEST NO 1 ACHIEVEMENT MONITORING 9W SUBTEST 3 ADDITION FACTS

152

ITEM NUMBER 11

| OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 2 | 6.9 | | -.89 | -.52 | -1.69 | -.99 | | 8.00 | 48.00 | |
| C 1 | 1 | 24 | 82.8 | C | .72 | .18 | 1.04 | .27 | C | 11.83 | 66.79 | 9 + 7 |
| 2 | 0 | 3 | 10.3 | | -.15 | .20 | -.26 | .35 | | 11.00 | 71.67 | |
| TOTAL | | 29 | | | | | | | | | | |

ITEM NUMBER 12

| OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 2 | 6.9 | | -.89 | -.52 | -1.69 | -.99 | | 8.00 | 48.00 | |
| C 1 | 1 | 26 | 89.7 | C | .89 | .53 | 1.44 | .85 | C | 11.81 | 67.69 | 6 + 4 |
| 2 | 0 | 1 | 3.4 | | -.26 | -.16 | -.63 | -.38 | | 10.00 | 58.00 | |
| TOTAL | | 29 | | | | | | | | | | |

220

TEST NO 1 ACHIEVEMENT MONITORING 9W SUBTEST 4 SUBTRACTION FACTS

ITEM NUMBER 1

| OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT | ITEM DESCRIPTIONS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| C 1 | 1 | 29 | 100.0 | C | .00 | .00 | .00 | .00 | C | 9.9T | 66.00 | 3 - 2 |
| 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| TOTAL | | 29 | | | | | | | | | | |

ITEM NUMBER 2

| OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 1 | 3.4 | | -.ST | -.50 | -1.35 | -1.20 | | 4.00 | 41.00 | |
| C 1 | 1 | 28 | 96.6 | C | .ST | .50 | I.09 | .96 | C | I0.18 | 66.B9 | 6 - 4 |
| 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| TOTAL | | 29 | | | | | | | | | | |

ITEM NUMBER 3

| OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| C 1 | 1 | 29 | 100.0 | C | .00 | .00 | .00 | .00 | C | 9.9T | 66.00 | 9 - 1 |
| 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| TOTAL | | 29 | | | | | | | | | | |

ITEM NUMBER 4

| OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| C 1 | 1 | 29 | 100.0 | C | .00 | .00 | .00 | .00 | C | 9.9T | 66.00 | 7 - 3 |
| 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| TOTAL | | 29 | | | | | | | | | | |

ITEM NUMBER 5

| OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| C 1 | 1 | 29 | 100.0 | C | .00 | .00 | .00 | .00 | C | 9.9T | 66.00 | 6 - 1 |
| 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| TOTAL | | 29 | | | | | | | | | | |

TEST NO 1 ACHIEVEMENT MONITORING 9W

SUBTEST 4 SUBTRACTION FACTS

154

ITEM NUMBER 6

| | OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST | TT | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 0 | 3 | 10.3 | | -.45 | -.36 | -.76 | -.61 | | 7.33 | 56.00 | |
| C | 1 | 1 | 25 | 86.2 | C | .50 | .35 | .75 | .53 | C | 10.36 | 67.32 | 7 - 5 |
| | 2 | 0 | 1 | 3.4 | | -.19 | -.06 | -.45 | -.14 | | 8.00 | 63.00 | |
| | TOTAL | | 29 | | | | | | | | | | |

ITEM NUMBER 7

| | OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST | TT | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 0 | 2 | 6.9 | | -.61 | -.39 | -1.17 | -.74 | | 5.50 | 52.50 | |
| C | 1 | 1 | 27 | 93.1 | C | .61 | .39 | 1.06 | .68 | C | 10.30 | 67.00 | 10 - 4 |
| | 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| | TOTAL | | 29 | | | | | | | | | | |

ITEM NUMBER 8

| | OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST | TT | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 0 | 6 | 20.7 | | -.68 | -.42 | -.96 | -.60 | | 7.33 | 58.17 | |
| C | 1 | 1 | 21 | 72.4 | C | .65 | .53 | .86 | .71 | C | 10.76 | 69.10 | 13 - 9 |
| | 2 | 0 | 2 | 6.9 | | -.06 | -.26 | -.12 | -.50 | | 9.50 | 57.00 | |
| | TOTAL | | 29 | | | | | | | | | | |

ITEM NUMBER 9

| | OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST | TT | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 0 | 10 | 34.5 | | -.53 | -.12 | -.69 | -.16 | | 8.50 | 64.40 | |
| C | 1 | 1 | 17 | 58.6 | C | .62 | .27 | .78 | .35 | C | 11.00 | 68.18 | 14 - 8 |
| | 2 | 0 | 2 | 6.9 | | -.20 | -.30 | -.38 | -.58 | | 8.50 | 55.50 | |
| | TOTAL | | 29 | | | | | | | | | | |

ITEM NUMBER 10

| | OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST | TT | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 0 | 10 | 34.5 | | -.57 | -.21 | -.74 | -.27 | | 8.40 | 63.30 | |
| C | 1 | 1 | 16 | 55.2 | C | .65 | .36 | .81 | .45 | C | 11.12 | 69.06 | 11 - 7 |
| | 2 | 0 | 3 | 10.3 | | -.16 | -.26 | -.28 | -.45 | | 9.00 | 58.67 | |
| | TOTAL | | 29 | | | | | | | | | | |

TEST NO 1 ACHIEVEMENT MONITORING 9W SUBTEST 4 SUBTRACTION FACTS

ITEM NUMBER 11

| OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 7 | 24.1 | | -.68 | -.42 | -.93 | -.57 | | 7.57 | 59.00 | |
| C 1 | 1 | 20 | 69.0 | C | .62 | .31 | .82 | .40 | C | 10.80 | 67.95 | 12 - 4 |
| 2 | 0 | 2 | 6.9 | | .00 | .14 | .01 | .28 | | 10.00 | 71.00 | |
| TOTAL | | 29 | | | | | | | | | | |

ITEM NUMBER 12

| OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 8 | 27.6 | | -.69 | -.36 | -.92 | -.48 | | 7.75 | 60.50 | |
| C 1 | 1 | 19 | 65.5 | C | .75 | .25 | .97 | .33 | C | 11.05 | 67.74 | 17 - 9 |
| 2 | 0 | 2 | 6.9 | | -.20 | .16 | -.38 | .30 | | 8.50 | 71.50 | |
| TOTAL | | 29 | | | | | | | | | | |

TEST NO 1 ACHIEVEMENT MONITORING 9W SUBTEST 5 ADDITION ALGORITHM

156

ITEM NUMBER 1

| | OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | MEANS TT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| C | 1 | 1 | 29 | 100.0 | C | .00 | .00 | .00 | .00 | C | 17.59 | 66.00 |
| | 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| | TOTAL | | 29 | | | | | | | | | |

ITEM DESCRIPTIONS: 51 + 27

ITEM NUMBER 2

| | OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | MEANS TT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| C | 1 | 1 | 29 | 100.0 | C | .00 | .00 | .00 | .00 | C | 17.59 | 66.00 |
| | 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| | TOTAL | | 29 | | | | | | | | | |

ITEM DESCRIPTIONS: 40 + 48

ITEM NUMBER 3

| | OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | MEANS TT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| C | 1 | 1 | 27 | 93.1 | C | .41 | .33 | .71 | .58 | C | 18.00 | 66.85 |
| | 2 | 0 | 2 | 6.9 | | -.41 | -.33 | -.78 | -.63 | | 12.00 | 54.50 |
| | TOTAL | | 29 | | | | | | | | | |

ITEM DESCRIPTIONS: 25 + 22

ITEM NUMBER 4

| | OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | MEANS TT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| C | 1 | 1 | 29 | 100.0 | C | .00 | .00 | .00 | .00 | C | 17.59 | 66.00 |
| | 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| | TOTAL | | 29 | | | | | | | | | |

ITEM DESCRIPTIONS: 362 + 205

ITEM NUMBER 5

| | OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | MEANS TT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| C | 1 | 1 | 29 | 100.0 | C | .00 | .00 | .00 | .00 | C | 17.59 | 66.00 |
| | 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| | TOTAL | | 29 | | | | | | | | | |

ITEM DESCRIPTIONS: 417 + 212

TEST NO 1 ACHIEVEMENT MONITORING 9W SUBTEST S ADDITION ALGORITHM

ITEM NUMBER 6

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | MEANS TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| C 1 | 1 | 26 | 96.6 | C | -.07 | .14 | -.14 | .27 | C | 17.54 | 66.25 |
| 2 | 0 | 1 | 3.4 | | .07 | -.14 | .14 | -.34 | | 19.00 | 59.00 |
| TOTAL | | 29 | | | | | | | | | |

683 + 215

ITEM NUMBER 7

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | MEANS TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| C 1 | 1 | 28 | 96.6 | C | .38 | .28 | .74 | .54 | C | 17.86 | 66.50 |
| 2 | 0 | 1 | 3.4 | | -.38 | -.28 | -.92 | -.67 | | 10.00 | 52.00 |
| TOTAL | | 29 | | | | | | | | | |

64 + 7

ITEM NUMBER 8

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | MEANS TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| C 1 | 1 | 29 | 100.0 | C | .00 | .00 | .00 | .00 | C | 17.59 | 66.00 |
| 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| TOTAL | | 29 | | | | | | | | | |

6 + 84

ITEM NUMBER 9

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | MEANS TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| C 1 | 1 | 28 | 96.6 | C | .38 | .28 | .74 | .54 | C | 17.86 | 66.50 |
| 2 | 0 | 1 | 3.4 | | -.38 | -.28 | -.92 | -.67 | | 10.00 | 52.00 |
| TOTAL | | 29 | | | | | | | | | |

7 + 59

ITEM NUMBER 10

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | MEANS TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| C 1 | 1 | 26 | 89.7 | C | .23 | .23 | .38 | .37 | C | 17.88 | 66.73 |
| 2 | 0 | 3 | 10.3 | | -.23 | -.23 | -.40 | -.39 | | 15.00 | 59.67 |
| TOTAL | | 29 | | | | | | | | | |

19 + 44

157

TEST NO 1 ACHIEVEMENT MONITORING 9H SUBTEST 5 ADDITION ALGORITHM

158

ITEM NUMBER 11

| | OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | MEANS TT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| C | 1 | 1 | 28 | 96.6 | C | -.07 | .00 | -.14 | .00 | C | 17.54 | 66.00 |
| | 2 | 0 | 1 | 3.4 | | .07 | .00 | .17 | .00 | | 19.00 | 66.00 |
| | TOTAL | | 29 | | | | | | | | | |

56 + 34

ITEM NUMBER 12

| | OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | MEANS TT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 0 | 2 | 6.9 | | -.19 | -.10 | -.36 | -.19 | | 15.00 | 62.50 |
| C | 1 | 1 | 24 | 82.8 | C | .05 | .14 | .07 | .20 | C | 17.67 | 66.58 |
| | 2 | 0 | 3 | 10.3 | | .10 | -.08 | .17 | -.14 | | 18.67 | 63.67 |
| | TOTAL | | 29 | | | | | | | | | |

59 + 65

ITEM NUMBER 13

| | OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | MEANS TT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 0 | 1 | 3.4 | | -.23 | -.16 | -.55 | -.38 | | 13.00 | 58.00 |
| C | 1 | 1 | 19 | 65.5 | C | .79 | .45 | 1.02 | .58 | C | 19.74 | 69.05 |
| | 2 | 0 | 9 | 31.0 | | -.72 | -.40 | -.95 | -.52 | | 13.56 | 60.44 |
| | TOTAL | | 29 | | | | | | | | | |

104 + 839

ITEM NUMBER 14

| | OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | MEANS TT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| C | 1 | 1 | 20 | 69.0 | C | .84 | .44 | 1.10 | .58 | C | 19.70 | 68.80 |
| | 2 | 0 | 9 | 31.0 | | -.84 | -.44 | -1.10 | -.58 | | 12.89 | 59.78 |
| | TOTAL | | 29 | | | | | | | | | |

559 + 236

ITEM NUMBER 15

| | OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | MEANS TT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| C | 1 | 1 | 15 | 51.7 | C | .72 | .47 | .91 | .59 | C | 20.20 | 70.27 |
| | 2 | 0 | 14 | 48.3 | | -.72 | -.47 | -.91 | -.59 | | 14.79 | 61.43 |
| | TOTAL | | 29 | | | | | | | | | |

328 + 349

TEST NO 1 ACHIEVEMENT MONITORING 9W SUBTEST 5 ADDITION ALGORITHM

ITEM NUMBER 16

| | OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | MEANS TT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 0 | 1 | 3.4 | | -.38 | -.50 | -.92 | -1.20 | | 10.00 | 41.00 |
| C | 1 | 1 | 23 | 79.3 | C | .51 | .44 | .72 | .62 | C | 18.57 | 68.13 |
| | 2 | 0 | 5 | 17.2 | | -.36 | -.23 | -.54 | -.34 | | 14.60 | 61.20 |
| | TOTAL | | 29 | | | | | | | | | |

431 + 272

ITEM NUMBER 17

| | OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | MEANS TT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 0 | 2 | 6.9 | | -.44 | -.48 | -.84 | -.91 | | 11.50 | 49.50 |
| C | 1 | 1 | 21 | 72.4 | C | .63 | .42 | .84 | .56 | C | 19.05 | 68.43 |
| | 2 | 0 | 6 | 20.7 | | -.42 | -.16 | -.60 | -.23 | | 14.50 | 63.00 |
| | TOTAL | | 29 | | | | | | | | | |

594 + 383

ITEM NUMBER 18

| | OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | MEANS TT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 0 | 1 | 3.4 | | -.38 | -.50 | -.92 | -1.20 | | 10.00 | 41.00 |
| C | 1 | 1 | 25 | 86.2 | C | .57 | .37 | .87 | .57 | C | 18.44 | 67.40 |
| | 2 | 0 | 3 | 10.3 | | -.42 | -.12 | -.70 | -.20 | | 13.00 | 62.67 |
| | TOTAL | | 29 | | | | | | | | | |

482 + 436

ITEM NUMBER 19

| | OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | MEANS TT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 0 | 5 | 17.2 | | -.44 | -.26 | -.65 | -.39 | | 14.00 | 60.60 |
| C | 1 | 1 | 14 | 48.3 | C | .68 | .31 | .85 | .39 | C | 20.21 | 69.00 |
| | 2 | 0 | 10 | 34.5 | | -.37 | -.12 | -.47 | -.15 | | 15.70 | 64.50 |
| | TOTAL | | 29 | | | | | | | | | |

347 + 589

ITEM NUMBER 20

| | OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | MEANS TT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 0 | 5 | 17.2 | | -.29 | -.18 | -.43 | -.27 | | 15.20 | 62.20 |
| C | 1 | 1 | 10 | 34.5 | C | .66 | .27 | .85 | .35 | | 21.00 | 69.50 |
| | 2 | 0 | 14 | 48.3 | | -.41 | -.12 | -.51 | -.15 | | 16.00 | 64.86 |
| | TOTAL | | 29 | | | | | | | | | |

188 + 295

159

TEST NO 1 ACHIEVEMENT MONITORING SW SUBTEST 5 ADDITION ALGORITHM

191

ITEM NUMBER 21

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEAN | TT MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 6 | 20.7 | | -.42 | -.30 | -.60 | -.42 | | 14.50 | 60.50 |
| C 1 | 1 | 11 | 37.9 | C | .69 | .41 | .88 | .52 | C | 20.91 | 70.91 |
| 2 | 0 | 12 | 41.4 | | -.34 | -.16 | -.43 | -.20 | | 16.08 | 64.25 |
| TOTAL | | 29 | | | | | | | | | |

ITEM NUMBER 22

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEAN | TT MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 10 | 34.5 | | -.37 | -.19 | -.47 | -.25 | | 15.70 | 63.50 |
| C 1 | 1 | 7 | 24.1 | C | .62 | .56 | .85 | .77 | C | 21.71 | 75.43 |
| 2 | 0 | 12 | 41.4 | | -.19 | -.30 | -.24 | -.38 | | 16.75 | 62.58 |
| TOTAL | | 29 | | | | | | | | | |

ITEM NUMBER 23

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEAN | TT MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 14 | 48.3 | | -.48 | -.33 | -.61 | -.41 | | 15.71 | 62.79 |
| C 1 | 1 | 8 | 27.6 | C | .56 | .54 | .75 | .72 | C | 21.00 | 74.25 |
| 2 | 0 | 7 | 24.1 | | -.02 | -.18 | -.03 | -.25 | | 17.43 | 63.00 |
| TOTAL | | 29 | | | | | | | | | |

ITEM NUMBER 24

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEAN | TT MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 16 | 55.2 | | -.36 | -.23 | -.45 | -.29 | | 16.37 | 64.06 |
| C 1 | 1 | 3 | 10.3 | C | .40 | .37 | .68 | .63 | C | 22.00 | 76.33 |
| 2 | 0 | 10 | 34.5 | | .12 | .00 | .15 | .00 | | 18.20 | 66.00 |
| TOTAL | | 29 | | | | | | | | | |

996
+ 317

69
34
+ 57

86
54
+ 46

95
99
+ 78

TEST NO 1 ACHIEVEMENT MONITORING 9W SUBTEST 6 SUBTRACTION ALGORITHM

ITEM NUMBER 1

| | OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEAN | TT MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| C | 1 | 1 | 27 | 93.1 | C | .19 | .06 | .33 | .10 | C | 12.07 | 66.15 |
| | 2 | 0 | 2 | 6.9 | | -.19 | -.06 | -.37 | -.11 | | 8.00 | 64.00 |
| | TOTAL | | 29 | | | | | | | | | |

ITEM DESCRIPTIONS: 94 − 60

ITEM NUMBER 2

| | OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEAN | TT MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| C | 1 | 1 | 28 | 96.6 | C | .38 | .16 | .73 | .31 | C | 12.18 | 66.29 |
| | 2 | 0 | 1 | 3.4 | | -.38 | -.16 | -.91 | -.38 | | 1.00 | 58.00 |
| | TOTAL | | 29 | | | | | | | | | |

ITEM DESCRIPTIONS: 78 − 64

ITEM NUMBER 3

| | OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEAN | TT MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| C | 1 | 1 | 26 | 89.7 | C | .53 | .49 | .86 | .79 | C | 12.77 | 67.58 |
| | 2 | 0 | 3 | 10.3 | | -.53 | -.49 | -.90 | -.83 | | 3.33 | 52.33 |
| | TOTAL | | 29 | | | | | | | | | |

ITEM DESCRIPTIONS: 48 − 21

ITEM NUMBER 4

| | OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEAN | TT MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| C | 1 | 1 | 28 | 96.6 | C | .38 | .16 | .73 | .31 | C | 12.18 | 66.29 |
| | 2 | 0 | 1 | 3.4 | | -.38 | -.16 | -.91 | -.38 | | 1.00 | 58.00 |
| | TOTAL | | 29 | | | | | | | | | |

ITEM DESCRIPTIONS: 634 − 523

ITEM NUMBER 5

| | OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEAN | TT MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| C | 1 | 1 | 28 | 96.6 | C | .38 | .16 | .73 | .31 | C | 12.18 | 66.29 |
| | 2 | 0 | 1 | 3.4 | | -.38 | -.16 | -.91 | -.38 | | 1.00 | 58.00 |
| | TOTAL | | 29 | | | | | | | | | |

ITEM DESCRIPTIONS: 582 − 232

TEST NO 1 ACHIEVEMENT MONITORING 94 SUBTEST 6 SUBTRACTION ALGORITHM



ITEM NUMBER 6

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEAN | TT MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 1 | 3.4 | | -.27 | -.50 | -.65 | -1.20 | | 4.00 | 41.00 |
| C 1 | 1 | 25 | 86.2 | C | .45 | .49 | .68 | .74 | C | 12.76 | 67.84 |
| 2 | 0 | 3 | 10.3 | | -.34 | -.25 | -.58 | -.43 | | 6.33 | 59.00 |
| TOTAL | | 29 | | | | | | | | | |

998 - 676

ITEM NUMBER 7

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEAN | TT MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 1 | 3.4 | | -.27 | -.50 | -.65 | -1.20 | | 4.00 | 41.00 |
| C 1 | 1 | 18 | 62.1 | C | .75 | .54 | .95 | .68 | C | 14.94 | 69.94 |
| 2 | 0 | 10 | 34.5 | | -.66 | -.35 | -.85 | -.46 | | 6.90 | 61.40 |
| TOTAL | | 29 | | | | | | | | | |

63 - 4

ITEM NUMBER 8

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEAN | TT MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 1 | 3.4 | | -.27 | -.50 | -.65 | -1.20 | | 4.00 | 41.00 |
| C 1 | 1 | 18 | 62.1 | C | .77 | .60 | .99 | .77 | C | 15.06 | 70.44 |
| 2 | 0 | 10 | 34.5 | | -.69 | -.42 | -.88 | -.55 | | 6.70 | 60.50 |
| TOTAL | | 29 | | | | | | | | | |

95 - 7

ITEM NUMBER 9

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEAN | TT MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 1 | 3.4 | | -.27 | -.5 | -.65 | -1.20 | | 4.00 | 41.00 |
| C 1 | 1 | 17 | 58.6 | C | .70 | .50 | .88 | .63 | C | 14.94 | 69.94 |
| 2 | 0 | 11 | 37.9 | | -.60 | -.32 | -.77 | -.40 | | 7.64 | 62.18 |
| TOTAL | | 29 | | | | | | | | | |

77 - 8

ITEM NUMBER 10

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEAN | TT MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 2 | 6.9 | | -.34 | -.40 | -.66 | -.77 | | 5.00 | 52.00 |
| C 1 | 1 | 18 | 62.1 | C | .84 | .57 | 1.07 | .73 | C | 15.33 | 70.22 |
| 2 | 0 | 9 | 31.0 | | -.69 | -.38 | -.91 | -.50 | | 6.22 | 60.67 |
| TOTAL | | 29 | | | | | | | | | |

31 - 15

TEST NO 1 ACHIEVEMENT MONITORING 9W SUBTEST 6 SUBTRACTION ALGORITHM

ITEM NUMBER 11

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEAN | TT MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|
| * | 0 | 2 | 6.9 | | -.34 | -.40 | -.66 | -.77 | | 5.00 | 52.00 |
| C 1 | 1 | 20 | 69.0 | C | .83 | .55 | 1.09 | .72 | C | 14.80 | 69.50 |
| 2 | 0 | 7 | 24.1 | | -.70 | -.36 | -.95 | -.49 | | 5.14 | 60.00 |
| TOTAL | | 29 | | | | | | | | | |

77 - 29

ITEM NUMBER 12

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEAN | TT MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 2 | 6.9 | | -.34 | -.40 | -.66 | -.77 | | 5.00 | 52.00 |
| C 1 | 1 | 19 | 65.5 | C | .75 | .55 | .97 | .71 | C | 14.74 | 69.79 |
| 2 | 0 | 8 | 27.6 | | -.61 | -.36 | -.81 | -.48 | | 6.50 | 60.50 |
| TOTAL | | 29 | | | | | | | | | |

72 - 63

ITEM NUMBER 13

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEAN | TT MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 6 | 20.7 | | -.19 | -.42 | -.26 | -.60 | | 9.83 | 58.17 |
| C 1 | 1 | 9 | 31.0 | C | .74 | .74 | .98 | .96 | C | 17.78 | 76.33 |
| 2 | 0 | 14 | 48.3 | | -.54 | -.34 | -.68 | -.42 | | 8.79 | 62.71 |
| TOTAL | | 29 | | | | | | | | | |

453 - 215

ITEM NUMBER 14

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEAN | TT MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 4 | 13.8 | | -.24 | -.42 | -.38 | -.66 | | 8.50 | 56.00 |
| C 1 | 1 | 9 | 31.0 | C | .73 | .76 | .96 | .99 | C | 17.67 | 76.67 |
| 2 | 0 | 16 | 55.2 | | -.51 | -.41 | -.64 | -.52 | | 9.31 | 62.50 |
| TOTAL | | 29 | | | | | | | | | |

950 - 219

ITEM NUMBER 15

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEAN | TT MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 7 | 24.1 | | -.19 | -.47 | -.26 | -.64 | | 10.00 | 58.14 |
| C 1 | 1 | 8 | 27.6 | C | .65 | .65 | .87 | .88 | C | 17.50 | 76.00 |
| 2 | 0 | 14 | 48.3 | | -.42 | -.18 | -.53 | -.23 | | 9.43 | 64.21 |
| TOTAL | | 29 | | | | | | | | | |

994 - 336

TEST NO 1 ACHIEVEMENT MONITORING 9W SUBTEST 6 SUBTRACTION ALGORITHM

164

ITEM NUMBER 16

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 7 | 24.1 | | -.17 | -.44 | -.24 | -.60 | | 10.14 | 50.71 |
| C 1 | 1 | 9 | 31.0 | C | .65 | .55 | .85 | .73 | C | 17.00 | 73.78 |
| 2 | 0 | 13 | 44.8 | | -.45 | -.14 | -.57 | -.18 | | 9.08 | 64.54 |
| TOTAL | | 29 | | | | | | | | | |

746 - 584

ITEM NUMBER 17

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 6 | 20.7 | | -.22 | -.36 | -.31 | -.51 | | 9.50 | 59.33 |
| C 1 | 1 | 12 | 41.4 | C | .77 | .57 | .98 | .72 | C | 16.75 | 72.42 |
| 2 | 0 | 11 | 37.9 | | -.60 | -.28 | -.77 | -.36 | | 7.64 | 62.64 |
| TOTAL | | 29 | | | | | | | | | |

914 - 540

ITEM NUMBER 18

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 7 | 24.1 | | -.19 | -.33 | -.26 | -.46 | | 10.00 | 60.43 |
| C 1 | 1 | 11 | 37.9 | C | .77 | .57 | .98 | .73 | C | 17.09 | 72.91 |
| 2 | 0 | 11 | 37.9 | | -.60 | -.28 | -.77 | -.36 | | 7.64 | 62.64 |
| TOTAL | | 29 | | | | | | | | | |

677 - 393

ITEM NUMBER 19

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 10 | 34.5 | | -.08 | -.42 | -.10 | -.54 | | 11.20 | 60.60 |
| C 1 | 1 | 2 | 6.9 | C | .41 | .40 | .79 | .77 | C | 20.00 | 80.00 |
| 2 | 0 | 17 | 58.6 | | -.14 | .19 | -.17 | .24 | | 11.18 | 67.53 |
| TOTAL | | 29 | | | | | | | | | |

428 - 289

ITEM NUMBER 21

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 9 | 31.0 | | -.11 | -.41 | -.15 | -.54 | | 10.89 | 60.22 |
| C 1 | 1 | 3 | 10.3 | C | .39 | .37 | .66 | .63 | C | 18.00 | 78.33 |
| 2 | 0 | 17 | 58.6 | | -.14 | .16 | -.17 | .20 | | 11.18 | 67.24 |
| TOTAL | | 29 | | | | | | | | | |

661 - 462

244

245

TEST NO 1 ACHIEVEMENT MONITORING 9W SUBTEST 6 SUBTRACTION ALGORITHM

ITEM NUMBER 21

| OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 12 | 41.4 | | .11 | -.19 | .14 | -.24 | | 12.50 | 63.83 |
| C 1 | 1 | 3 | 10.3 | C | .43 | .41 | .73 | .69 | C | 18.67 | 77.33 |
| 2 | 0 | 14 | 48.3 | | -.37 | -.06 | -.47 | -.07 | | 9.71 | 65.43 |
| TOTAL | | 29 | | | | | | | | | |

685 - 596

ITEM NUMBER 22

| OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 13 | 44.8 | | .15 | -.17 | .19 | -.21 | | 12.62 | 64.23 |
| C 1 | 1 | 3 | 10.3 | C | .52 | .54 | .88 | .92 | C | 20.00 | 81.00 |
| 2 | 0 | 13 | 44.8 | | -.47 | -.16 | -.59 | -.20 | | 9.00 | 64.31 |
| TOTAL | | 29 | | | | | | | | | |

620 - 545

ITEM NUMBER 23

| OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 15 | 51.7 | | .24 | -.06 | .31 | -.07 | | 13.07 | 65.47 |
| C 1 | 1 | 1 | 3.4 | C | .25 | .34 | .60 | .82 | C | 19.00 | 83.00 |
| 2 | 0 | 13 | 44.8 | | -.34 | -.07 | -.43 | -.08 | | 9.77 | 65.31 |
| TOTAL | | 29 | | | | | | | | | |

701 - 599

ITEM NUMBER 24

| OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 15 | 51.7 | | .35 | .11 | .43 | .14 | | 13.60 | 67.00 |
| C 1 | 1 | 0 | .0 | C | .00 | .00 | .00 | .00 | C | .00 | .00 |
| 2 | 0 | 14 | 48.3 | | -.35 | -.11 | -.43 | -.14 | | 9.86 | 64.93 |
| TOTAL | | 29 | | | | | | | | | |

400 - 276

TEST NO 1 ACHIEVEMENT MONITORING A0 SUBTEST 1 OBJECTIVES TEST



ITEM NUMBER 1

| OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT | ITEM DESCRIPTIONS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| C 2 | 1 | 30 | 93.8 | C | .61 | .40 | 1.09 | .71 | C | 12.97 | 76.70 | Numerousness |
| 3 | 0 | 1 | 3.1 | | -.20 | -.10 | -.49 | -.25 | | 11.00 | 72.00 | Writes 0-99 |
| 4 | 0 | 1 | 3.1 | | -.66 | -.46 | -1.62 | -1.13 | | 7.00 | 58.00 | |
| TOTAL | | 32 | | | | | | | | | | |

ITEM NUMBER 2

| OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | Numerousness |
| C 3 | 1 | 32 | 100.0 | C | .00 | .00 | .00 | .00 | C | 12.72 | 75.97 | Represents 0-99 |
| 4 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| TOTAL | | 32 | | | | | | | | | | |

ITEM NUMBER 3

| OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 1 | 3.1 | | -.66 | -.46 | -1.62 | -1.13 | | 7.00 | 58.00 | |
| 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | Problem Solving (A) |
| C 3 | 1 | 31 | 96.9 | C | .66 | .46 | 1.27 | .88 | C | 12.90 | 76.55 | Subt-simple separating 11-15 |
| 4 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| TOTAL | | 32 | | | | | | | | | | |

ITEM NUMBER 4

| OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| C 1 | 1 | 27 | 84.4 | C | .64 | .40 | .95 | .59 | C | 13.15 | 77.19 | |
| 2 | 0 | 1 | 3.1 | | -.20 | -.13 | -.49 | -.31 | | 11.00 | 71.00 | Problem Solving (A) |
| 3 | 0 | 3 | 9.4 | | -.42 | -.42 | -.73 | -.74 | | 10.67 | 66.67 | Subt-comparison 0-99 |
| 4 | 0 | 1 | 3.1 | | -.49 | .00 | -1.06 | .00 | | 9.00 | 76.00 | |
| TOTAL | | 32 | | | | | | | | | | |

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST | TT | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 2 | 6.3 | | -.45 | .11 | -.88 | .22 | | 10.00 | T9.00 | |
| 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | Problem Solving (B) |
| C 3 | 1 | 30 | 93.8 | C | .45 | -.11 | .79 | -.20 | C | 12.90 | 7S.7T | Subt-join-addend 11-15 |
| 4 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| TOTAL | | 32 | | | | | | | | | | |

ITEM NUMBER 12b

COEFFICIENTS OF CORRELATION — MEANS

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST | TT | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| C 1 | 1 | 28 | 87.5 | C | .66 | .23 | 1.02 | .35 | C | 13.11 | 76.ST | |
| 2 | 0 | 1 | 3.1 | | -.20 | -.13 | -.49 | -.31 | | 11.00 | T1.00 | Problem Solving (B) |
| 3 | 0 | 2 | 6.3 | | -.45 | -.22 | -.88 | -.43 | | 10.00 | 70.00 | Add-simple joining 0-99 |
| 4 | 0 | 1 | 3.1 | | -.43 | .00 | -1.06 | .00 | | 9.00 | 76.00 | |
| TOTAL | | 32 | | | | | | | | | | |



TEST NO 1 ACHIEVEMENT MONITORING 10 SUBTEST 1 OBJECTIVES TEST

ITEM NUMBER 8a

COEFFICIENTS OF CORRELATION — MEANS

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST | TT | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | Order, Place Value |
| C 3 | 1 | 32 | 100.0 | C | .00 | .00 | .00 | .00 | C | 12.72 | T5.97 | Ordering 0-99 |
| 4 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| TOTAL | | 32 | | | | | | | | | | |

ITEM NUMBER 8g

COEFFICIENTS OF CORRELATION — MEANS

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST | TT | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 9 | 28.1 | | -.15 | -.19 | -.21 | -.26 | | 12.33 | T3.7B | |
| C 2 | 1 | 18 | 56.3 | C | .61 | .41 | .T6 | .51 | C | 13.56 | TB.50 | Order, Place Value |
| 3 | 0 | 1 | 3.1 | | -.66 | -.46 | -1.62 | -1.13 | | T.00 | 58.00 | Place Value 0-99 |
| 4 | 0 | 4 | 12.5 | | -.35 | -.11 | -.5T | -.1T | | 11.25 | T4.00 | |
| TOTAL | | 32 | | | | | | | | | | |

ITEM NUMBER 9

| OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| C 2 | 1 | 32 | 100.0 | C | .00 | .00 | .00 | .00 | C | 12.72 | 75.97 |
| 3 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| 4 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| TOTAL | | 32 | | | | | | | | | |

Sentence Writing (A)
Add-part part whole 11-15

ITEM NUMBER 10

| OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| C 3 | 1 | 32 | 100.0 | C | .00 | .00 | .00 | .00 | C | 12.72 | 75.97 |
| 4 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| TOTAL | | 32 | | | | | | | | | |

Sentence Writing (A)
Subt-simple separating 0-99

168

LERTAP 2.0 SUMMARY ITEM STATISTICS PAGE 18

TEST NO 1 ACHIEVEMENT MONITORING AU 10 SUBTEST 1 OBJECTIVES TEST

ITEM NUMBER 11

| OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 2 | 6.3 | | -.04 | .07 | -.07 | .15 | | 12.50 | 78.00 |
| 2 | 0 | 6 | 18.8 | | -.53 | -.07 | -.76 | -.10 | | 11.00 | 75.00 |
| C 3 | 1 | 23 | 71.9 | C | .64 | .02 | .85 | .02 | O | 13.35 | 76.04 |
| 4 | 0 | 1 | 3.1 | | -.43 | .00 | -1.06 | .00 | | 9.00 | 76.00 |
| TOTAL | | 32 | | | | | | | | | |

Sentence Writing (B)
Subt-join-addend 11-15

ITEM NUMBER 12

| OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 2 | 6.3 | | -.12 | -.35 | -.23 | -.68 | | 12.00 | 66.50 |
| C 2 | 1 | 29 | 90.6 | C | .49 | .56 | .81 | .92 | C | 12.97 | 77.24 |
| 3 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| 4 | 0 | 1 | 3.1 | | -.66 | -.46 | -1.62 | -1.13 | | 7.00 | 58.00 |
| TOTAL | | 32 | | | | | | | | | |

Sentence Writing (B)
Subt-part part whole-addend 0-99

252

253

TEST NO 1 ACHIEVEMENT MONITORING 10 AU SUBTEST 1 OBJECTIVES TEST

ITEM NUMBER 13

| | OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 0 | 1 | 3.1 | | -.08 | -.25 | -.20 | -.63 | | 12.00 | 66.00 | |
| C | 2 | 1 | 31 | 96.9 | C | .08 | .25 | .16 | .49 | C | 12.74 | 76.29 | Algorithms |
| | 3 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | Addition Algorithm |
| | 4 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| | TOTAL | | 32 | | | | | | | | | | |

ITEM NUMBER 14

| | OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| | 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | Algorithms |
| C | 3 | 1 | 32 | 100.0 | C | .00 | .00 | .00 | .00 | C | 12.72 | 75.97 | Subtraction Algorithm |
| | 4 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| | TOTAL | | 32 | | | | | | | | | | |

LERTAP 2.0 SUMMARY ITEM STATISTICS

TEST NO 1 ACHIEVEMENT MONITORING (C) AU SUBTEST 2 SENTENCE WRITING FREE RESPONSE

ITEM NUMBER 1

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| C 1 | 1 | 28 | 87.5 | C | .72 | .55 | 1.13 | .85 | C | 3.79 | 77.43 |
| 2 | 0 | 4 | 12.5 | | -.72 | -.55 | -1.16 | -.88 | | 2.25 | 65.75 |
| TOTAL | | 32 | | | | | | | | | |

COEFFICIENTS OF CORRELATION — MEANS

ITEM DESCRIPTIONS
Sentence Writing
Subt-comparison 11-15

ITEM NUMBER 2

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| C 1 | 1 | 31 | 96.9 | C | .41 | .13 | .79 | .24 | C | 3.65 | 76.13 |
| 2 | 0 | 1 | 3.1 | | -.41 | -.13 | -1.01 | -.31 | | 2.00 | 71.00 |
| TOTAL | | 32 | | | | | | | | | |

COEFFICIENTS OF CORRELATION — MEANS

Sentence Writing
Add-part part whole 0-99

ITEM NUMBER 3

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| C 1 | 1 | 25 | 78.1 | C | .77 | .28 | 1.07 | .38 | C | 3.68 | 77.00 |
| 2 | 0 | 7 | 21.9 | | -.77 | -.28 | -1.08 | -.39 | | 2.57 | 72.29 |
| TOTAL | | 32 | | | | | | | | | |

COEFFICIENTS OF CORRELATION — MEANS

Sentence Writing
Subt-join-addend 0-99

ITEM NUMBER 4

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| C 1 | 1 | 31 | 96.9 | C | .41 | .13 | .79 | .24 | C | 3.65 | 76.13 |
| 2 | 0 | 1 | 3.1 | | -.41 | -.13 | -1.01 | -.31 | | 2.00 | 71.00 |
| TOTAL | | 32 | | | | | | | | | |

COEFFICIENTS OF CORRELATION — MEANS

Sentence Writing
Add-simple joining 11-15

TEST NO 1 ACHIEVEMENT MONITORING AU SUBTEST 3 ADDITION FACTS

ITEM NUMBER 1

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | MEANS TT | ITEM DESCRIPTIONS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| C 1 | 1 | 32 | 100.0 | C | .00 | .00 | .00 | .00 | C | 11.12 | 75.97 | 1 + 5 |
| 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| TOTAL | | 32 | | | | | | | | | | |

ITEM NUMBER 2

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | MEANS TT | ITEM DESCRIPTIONS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| C 1 | 1 | 31 | 96.9 | C | .02 | -.00 | .04 | -.00 | C | 11.13 | 75.97 | 3 + 2 |
| 2 | 0 | 1 | 3.1 | | -.02 | .00 | -.05 | .00 | | 11.00 | 76.00 | |
| TOTAL | | 32 | | | | | | | | | | |

ITEM NUMBER 3

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | MEANS TT | ITEM DESCRIPTIONS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| C 1 | 1 | 32 | 100.0 | C | .00 | .00 | .00 | .00 | C | 11.12 | 75.97 | 4 + 4 |
| 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| TOTAL | | 32 | | | | | | | | | | |

ITEM NUMBER 4

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | MEANS TT | ITEM DESCRIPTIONS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| C 1 | 1 | 32 | 100.0 | C | .00 | .00 | .00 | .00 | C | 11.12 | 75.97 | 3 + 6 |
| 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| TOTAL | | 32 | | | | | | | | | | |

ITEM NUMBER 5

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | MEANS TT | ITEM DESCRIPTIONS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| C 1 | 1 | 32 | 100.0 | C | .00 | .00 | .00 | .00 | C | 11.12 | 75.97 | 4 + 3 |
| 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| TOTAL | | 32 | | | | | | | | | | |

TEST NO 1 ACHIEVEMENT MONITORING AU SUBTEST 3 ADDITION FACTS

172

ITEM NUMBER 6

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEAN | TT MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| C 1 | 1 | 32 | 100.0 | C | .00 | .00 | .00 | .00 | C | 11.12 | 75.97 |
| 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| TOTAL | | 32 | | | | | | | | | |

6 + 2

ITEM NUMBER 7

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEAN | TT MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 2 | 6.3 | | -.57 | -.45 | -1.12 | -.90 | | 8.50 | 63.50 |
| C 1 | 1 | 26 | 81.3 | C | .72 | .68 | 1.03 | .97 | C | 11.54 | 78.27 |
| 2 | 0 | 4 | 12.5 | | -.44 | -.47 | -.70 | -.75 | | 9.75 | 67.25 |
| TOTAL | | 32 | | | | | | | | | |

5 + 8

ITEM NUMBER 8

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEAN | TT MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 2 | 6.3 | | -.35 | -.27 | -.69 | -.54 | | 9.50 | 68.50 |
| C 1 | 1 | 27 | 84.4 | C | .62 | .54 | .92 | .81 | C | 11.44 | 77.63 |
| 2 | 0 | 3 | 9.4 | | -.48 | -.45 | -.84 | -.79 | | 9.33 | 66.00 |
| TOTAL | | 32 | | | | | | | | | |

6 + 9

ITEM NUMBER 9

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEAN | TT MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 2 | 6.3 | | -.57 | -.45 | -1.12 | -.90 | | 8.50 | 63.50 |
| C 1 | 1 | 30 | 93.8 | C | .57 | .45 | 1.01 | .80 | C | 11.30 | 76.60 |
| 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| TOTAL | | 32 | | | | | | | | | |

9 + 3

ITEM NUMBER 10

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEAN | TT MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 4 | 12.5 | | -.44 | -.37 | -.70 | -.60 | | 9.75 | 69.00 |
| C 1 | 1 | 25 | 78.1 | C | .56 | .42 | .78 | .59 | C | 11.48 | 77.56 |
| 2 | 0 | 3 | 9.4 | | -.30 | -.18 | -.53 | -.31 | | 10.00 | 72.00 |
| TOTAL | | 32 | | | | | | | | | |

5 + 7

LERTAP 2.0

SUMMARY ITEM STATISTICS

TEST NO 1 ACHIEVEMENT MONITORING AU

SUBTEST 3 ADDITION FACTS

ITEM NUMBER 11

| | OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 0 | 1 | 3.1 | | -.32 | -.13 | -.79 | -.31 | | 9.00 | 71.00 | |
| C | 1 | 1 | 29 | 90.6 | C | .48 | .32 | .79 | .52 | C | 11.31 | 76.69 | 8 + 9 |
| | 2 | 0 | 2 | 6.3 | | -.35 | -.29 | -.69 | -.57 | | 9.50 | 68.00 | |
| | TOTAL | | 32 | | | | | | | | | | |

ITEM NUMBER 12

| | OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 0 | 3 | 9.4 | | -.48 | -.12 | -.84 | -.21 | | 9.33 | 73.33 | |
| C | 1 | 1 | 28 | 87.5 | C | .52 | .08 | .80 | .12 | C | 11.36 | 76.18 | 3 + 8 |
| | 2 | 0 | 1 | 3.1 | | -.17 | .05 | -.42 | .13 | | 10.00 | 78.00 | |
| | TOTAL | | 32 | | | | | | | | | | |

TEST NO 1 ACHIEVEMENT MONITORING AU SUBTEST 4 SUBTRACTION FACTS



ITEM NUMBER 1

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | MEANS TT | ITEM DESCRIPTIONS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| C 1 | 1 | 32 | 100.0 | C | .00 | .00 | .00 | .00 | C | 10.72 | 75.97 | 5 - 1 |
| 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| TOTAL | | 32 | | | | | | | | | | |

ITEM NUMBER 2

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | MEANS TT | ITEM DESCRIPTIONS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 1 | 3.1 | | -.32 | .05 | -.79 | .13 | | 8.00 | 78.00 | |
| C 1 | 1 | 31 | 96.9 | C | .32 | -.05 | .62 | -.10 | C | 10.81 | 75.90 | 9 - 2 |
| 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| TOTAL | | 32 | | | | | | | | | | |

ITEM NUMBER 3

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | MEANS TT | ITEM DESCRIPTIONS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| C 1 | 1 | 32 | 100.0 | C | .00 | .00 | .00 | .00 | C | 10.72 | 75.97 | 8 - 7 |
| 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| TOTAL | | 32 | | | | | | | | | | |

ITEM NUMBER 4

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | MEANS TT | ITEM DESCRIPTIONS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| C 1 | 1 | 31 | 96.9 | C | .44 | .40 | .85 | .79 | C | 10.84 | 76.48 | 5 - 3 |
| 2 | 0 | 1 | 3.1 | | -.44 | -.40 | -1.08 | -1.00 | | 7.00 | 60.00 | |
| TOTAL | | 32 | | | | | | | | | | |

ITEM NUMBER 5

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | MEANS TT | ITEM DESCRIPTIONS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 1 | 3.1 | | -.44 | -.40 | -1.08 | -1.00 | | 7.00 | 60.00 | |
| C 1 | 1 | 31 | 96.9 | C | .44 | .40 | .85 | .79 | C | 10.84 | 76.48 | 7 - 6 |
| 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| TOTAL | | 32 | | | | | | | | | | |

TEST NO 1 ACHIEVEMENT MONITORING 10 AU SUBTEST 4 SUBTRACTION FACTS

ITEM NUMBER 6

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEAN | TT MEAN | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| C 1 | 1 | 32 | 100.0 | C | .00 | .00 | .00 | .00 | C | 10.72 | 75.97 | 8 - 5 |
| 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| TOTAL | | 32 | | | | | | | | | | |

ITEM NUMBER 7

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEAN | TT MEAN | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 1 | 3.1 | | -.44 | -.08 | -1.08 | -.19 | | 7.00 | 73.00 | |
| C 1 | 1 | 30 | 93.8 | C | .38 | .38 | .66 | .68 | C | 10.87 | 76.67 | 14 - 7 |
| 2 | 0 | 1 | 3.1 | | -.08 | -.46 | -.21 | -1.13 | | 10.00 | 58.00 | |
| TOTAL | | 32 | | | | | | | | | | |

ITEM NUMBER 8

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEAN | TT MEAN | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 3 | 9.4 | | -.57 | -.20 | -1.00 | -.34 | | 8.00 | 71.67 | |
| C 1 | 1 | 26 | 81.3 | C | .80 | .21 | 1.15 | .30 | C | 11.31 | 76.69 | 12 - 5 |
| 2 | 0 | 3 | 9.4 | | -.50 | -.09 | -.88 | -.16 | | 8.33 | 74.00 | |
| TOTAL | | 32 | | | | | | | | | | |

ITEM NUMBER 9

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEAN | TT MEAN | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 2 | 6.3 | | -.63 | -.35 | -1.24 | -.68 | | 7.00 | 66.50 | |
| C 1 | 1 | 29 | 90.6 | C | .57 | .47 | .94 | .77 | C | 11.00 | 77.03 | 11 - 8 |
| 2 | 0 | 1 | 3.1 | | -.08 | -.30 | -.21 | -.75 | | 10.00 | 64.00 | |
| TOTAL | | 32 | | | | | | | | | | |

ITEM NUMBER 10

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEAN | TT MEAN | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 6 | 18.8 | | -.75 | -.21 | -1.09 | -.31 | | 8.33 | 72.03 | |
| C 1 | 1 | 19 | 59.4 | C | .72 | .36 | .92 | .48 | C | 11.63 | 78.05 | 13 - 7 |
| 2 | 0 | 7 | 21.9 | | -.15 | -.22 | -.21 | -.31 | | 10.29 | 73.00 | |
| TOTAL | | 32 | | | | | | | | | | |

TEST NO 1 ACHIEVEMENT MONITORING 10 AU

SUBTEST 4 SUBTRACTION FACTS

176

ITEM NUMBER 11

| | OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST | TT | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 0 | 1 | 3.1 | | -.32 | -.23 | -.79 | -.56 | | 8.00 | 67.00 | |
| C | 1 | 1 | 29 | 90.6 | C | .29 | .21 | .48 | .35 | C | 10.86 | 76.45 | 12 - 9 |
| | 2 | 0 | 2 | 6.3 | | -.12 | -.09 | -.24 | -.18 | | 10.00 | 73.50 | |
| | TOTAL | | 32 | | | | | | | | | | |

COEFFICIENTS OF CORRELATION — MEANS

ITEM NUMBER 12

| | OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST | TT | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 0 | 6 | 18.8 | | -.65 | -.17 | -.94 | -.24 | | 8.67 | 73.50 | |
| C | 1 | 1 | 21 | 65.6 | C | .64 | .17 | .83 | .22 | C | 11.43 | 76.86 | 15 - 8 |
| | 2 | 0 | 5 | 15.6 | | -.15 | -.05 | -.22 | -.07 | | 10.20 | 75.20 | |
| | TOTAL | | 32 | | | | | | | | | | |

COEFFICIENTS OF CORRELATION — MEANS

268

LERTAP 2.0

SUMMARY ITEM STATISTICS

TEST NO 1 ACHIEVEMENT MONITORING AU

SUBTEST 5 ADDITION ALGORITHM

ITEM DESCRIPTIONS

ITEM NUMBER 1

| OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| C 1 | 1 | 32 | 100.0 | C | .00 | .00 | .00 | .00 | C | 21.75 | 75.97 |
| 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| TOTAL | | 32. | | | | | | | | | |

43
+ 25

ITEM NUMBER P

| OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| C 1 | 1 | 30 | 93.8 | C | .25 | .02 | .45 | .03 | C | 21.87 | T6.00 |
| 2 | 0 | 2 | 6.3 | | -.25 | -.02 | -.50 | -.03 | | 20.00 | 75.50 |
| TOTAL | | 32 | | | | | | | | | |

14
+ 84

ITEM NUMBER 3

| OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| C 1 | 1 | 32 | 100.0 | C | .00 | .00 | .00 | .00 | C | 21.75 | 75.97 |
| 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| TOTAL | | 32 | | | | | | | | | |

52
+ 45

ITEM NUMBER 4

| OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| C 1 | 1 | 29 | 90.6 | C | .14 | -.14 | .22 | -.23 | C | 21.83 | T5.66 |
| 2 | 0 | 3 | 9.4 | | -.14 | .14 | -.24 | .24 | | 21.00 | T9.00 |
| TOTAL | | 32 | | | | | | | | | |

614
+ 384

ITEM NUMBER 5

| OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| C 1 | 1 | 32 | 100.0 | C | .00 | .00 | .00 | .00 | C | 21.75 | T5.97 |
| 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| TOTAL | | 32 | | | | | | | | | |

132
+ 551

177

TEST NO 1 ACHIEVEMENT MONITORING AU SUBTEST 5 ADDITION ALGORITHM

ITEM NUMBER 6

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| C 1 | 1 | 32 | 100.0 | C | .00 | .00 | .00 | .00 | C | 21.75 | 75.97 |
| 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| TOTAL | | 32 | | | | | | | | | |

COEFFICIENTS OF CORRELATION MEANS

503 + 293

ITEM NUMBER 7

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| C 1 | 1 | 32 | 100.0 | C | .00 | .00 | .00 | .00 | C | 21.75 | 75.97 |
| 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| TOTAL | | 32 | | | | | | | | | |

COEFFICIENTS OF CORRELATION MEANS

56 + 6

ITEM NUMBER 8

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| C 1 | 1 | 31 | 96.9 | C | -.03 | .08 | -.05 | .15 | C | 21.74 | 76.06 |
| 2 | 0 | 1 | 3.1 | | .03 | -.08 | .06 | -.19 | | 22.00 | 73.00 |
| TOTAL | | 32 | | | | | | | | | |

COEFFICIENTS OF CORRELATION MEANS

29 + 8

ITEM NUMBER 9

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| C 1 | 1 | 31 | 96.9 | C | .38 | .46 | .73 | .88 | C | 21.87 | 76.55 |
| 2 | 0 | 1 | 3.1 | | -.38 | -.46 | -.93 | -1.13 | | 18.00 | 58.00 |
| TOTAL | | 32 | | | | | | | | | |

COEFFICIENTS OF CORRELATION MEANS

6 + 85

ITEM NUMBER 10

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| C 1 | 1 | 32 | 100.0 | C | .00 | .00 | .00 | .00 | C | 21.75 | 75.97 |
| 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| TOTAL | | 32 | | | | | | | | | |

COEFFICIENTS OF CORRELATION MEANS

38 + 45

272

273

178

TEST NO 1 ACHIEVEMENT MONITORING (0) AU SUBTEST 5 ADDITION ALGORITHM

ITEM NUMBER 11

| OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| C 1 | 1 | 32 | 100.0 | C | .00 | .00 | .00 | .00 | C | 21.75 | 75.97 |
| 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| TOTAL | | 32 | | | | | | | | | |

29
+ 32

ITEM NUMBER 12

| OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 1 | 3.1 | | -.16 | -.02 | -.44 | -.06 | | 20.00 | 75.00 |
| C 1 | 1 | 29 | 90.6 | C | .32 | .26 | .52 | .42 | C | 21.93 | 76.55 |
| 2 | 0 | 2 | 6.3 | | -.25 | -.29 | -.50 | -.57 | | 20.00 | 68.00 |
| TOTAL | | 32 | | | | | | | | | |

98
+ 72

ITEM NUMBER 13

| OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| C 1 | 1 | 31 | 96.9 | C | .48 | .02 | .93 | .05 | C | 21.90 | 76.00 |
| 2 | 0 | 1 | 3.1 | | -.48 | -.02 | -1.18 | -.06 | | 17.00 | 75.00 |
| TOTAL | | 32 | | | | | | | | | |

167
+ 426

ITEM NUMBER 14

| OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| C 1 | 1 | 30 | 93.8 | C | .25 | -.02 | .46 | -.03 | C | 21.87 | 75.93 |
| 2 | 0 | 2 | 6.3 | | -.25 | .02 | -.50 | .04 | | 20.00 | 76.50 |
| TOTAL | | 32 | | | | | | | | | |

727
+ 213

ITEM NUMBER 15

| OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| C 1 | 1 | 31 | 96.9 | C | .48 | .02 | .93 | .05 | C | 21.90 | 76.00 |
| 2 | 0 | 1 | 3.1 | | -.48 | -.02 | -1.18 | -.06 | | 17.00 | 75.00 |
| TOTAL | | 32 | | | | | | | | | |

409
+ 383

179

TEST NO 1 ACHIEVEMENT MONITORING AU SUBTEST 5 ADDITION ALGORITHM



ITEM NUMBER 16

| OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| C 1 | 1 | 27 | 84.4 | C | .33 | .07 | .48 | .11 | C | 22.00 | 76.19 |
| 2 | 0 | 5 | 15.6 | | -.33 | -.07 | -.49 | -.11 | | 20.40 | 74.80 |
| TOTAL | | 32 | | | | | | | | | |

155 + 792

ITEM NUMBER 17

| OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| C 1 | 1 | 31 | 96.9 | C | -.13 | -.08 | -.24 | -.15 | C | 21.71 | 75.87 |
| 2 | 0 | 1 | 3.1 | | .13 | .08 | .31 | .19 | | 23.00 | 79.00 |
| TOTAL | | 32 | | | | | | | | | |

671 + 176

ITEM NUMBER 18

| OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| C 1 | 1 | 30 | 93.8 | C | .25 | .02 | .45 | .03 | C | 21.87 | 76.00 |
| 2 | 0 | 2 | 6.3 | | -.25 | -.02 | -.50 | -.03 | | 20.00 | 75.50 |
| TOTAL | | 32 | | | | | | | | | |

334 + 484

ITEM NUMBER 19

| OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| C 1 | 1 | 30 | 93.8 | C | .54 | -.04 | .96 | -.07 | C | 22.00 | 75.90 |
| 2 | 0 | 2 | 6.3 | | -.54 | .04 | -1.07 | .07 | | 18.00 | 77.00 |
| TOTAL | | 32 | | | | | | | | | |

479 + 479

ITEM NUMBER 20

| OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| C 1 | 1 | 28 | 87.5 | C | .48 | .23 | .74 | .35 | C | 22.07 | 76.57 |
| 2 | 0 | 4 | 12.5 | | -.48 | -.23 | -.77 | -.36 | | 19.50 | 71.75 |
| TOTAL | | 32 | | | | | | | | | |

338 + 595

276

277

TEST NO 1 ACHIEVEMENT MONITORING AU SUBTEST 5 ADDITION ALGORITHM

ITEM NUMBER 21

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEAN | TT MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 3 | 9.4 | | -.44 | -.39 | -.76 | -.68 | | 19.33 | 67.33 |
| C 1 | 1 | 22 | 68.8 | C | .62 | .63 | .81 | .82 | C | 22.50 | 78.95 |
| 2 | 0 | 7 | 21.9 | | -.39 | -.42 | -.55 | -.59 | | 20.43 | 70.29 |
| TOTAL | | 32 | | | | | | | | | |

COEFFICIENTS OF CORRELATION — MEANS

ITEM NUMBER 22

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEAN | TT MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 4 | 12.5 | | -.48 | -.51 | -.77 | -.81 | | 19.50 | 66.50 |
| C 1 | 1 | 21 | 65.6 | C | .49 | .41 | .63 | .53 | C | 22.38 | 78.10 |
| 2 | 0 | 7 | 21.9 | | -.18 | -.07 | -.25 | -.10 | | 21.14 | 75.00 |
| TOTAL | | 32 | | | | | | | | | |

COEFFICIENTS OF CORRELATION — MEANS

ITEM NUMBER 23

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEAN | TT MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 4 | 12.5 | | -.42 | -.56 | -.68 | -.90 | | 19.75 | 65.50 |
| C 1 | 1 | 26 | 81.3 | C | .56 | .73 | .80 | 1.05 | C | 22.23 | 78.46 |
| 2 | 0 | 2 | 6.3 | | -.33 | -.42 | -.64 | -.82 | | 19.50 | 64.50 |
| TOTAL | | 32 | | | | | | | | | |

COEFFICIENTS OF CORRELATION — MEANS

ITEM NUMBER 24

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEAN | TT MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 5 | 15.6 | | -.33 | -.44 | -.49 | -.66 | | 20.40 | 68.80 |
| C 1 | 1 | 15 | 46.9 | C | .24 | .54 | .30 | .68 | C | 22.20 | 80.07 |
| 2 | 0 | 12 | 37.5 | | .00 | -.23 | .00 | -.30 | | 21.75 | 73.83 |
| TOTAL | | 32 | | | | | | | | | |

COEFFICIENTS OF CORRELATION — MEANS

864
+ 658

59
49
+ 37

21
33
+ 59

86
27
+ 98



278

279

TEST NO 1 ACHIEVEMENT MONITORING AU SUBTEST 6 SUBTRACTION ALGORITHM

182

ITEM NUMBER 1

| OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT | ITEM DESCRIPTIONS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | 87 |
| C 1 | 1 | 31 | 96.9 | C | .05 | .08 | .09 | .15 | C | 16.10 | 76.06 | - 51 |
| 2 | 0 | 1 | 3.1 | | -.05 | -.08 | -.12 | -.19 | | 15.00 | 73.00 | |
| TOTAL | | 32 | | | | | | | | | | |

ITEM NUMBER 2

| OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | 79 |
| C 1 | 1 | 32 | 100.0 | C | .00 | .00 | .00 | .00 | C | 16.06 | 75.91 | - 43 |
| 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| TOTAL | | 32 | | | | | | | | | | |

ITEM NUMBER 3

| OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | 98 |
| C 1 | 1 | 30 | 93.8 | C | -.03 | -.02 | -.05 | -.03 | C | 16.03 | 75.93 | - 25 |
| 2 | 0 | 2 | 6.3 | | .03 | .02 | .06 | .04 | | 16.50 | 76.50 | |
| TOTAL | | 32 | | | | | | | | | | |

ITEM NUMBER 4

| OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | 915 |
| C 1 | 1 | 29 | 90.6 | C | .14 | .04 | .23 | .07 | C | 16.24 | 76.07 | - 411 |
| 2 | 0 | 3 | 9.4 | | -.14 | -.04 | -.25 | -.08 | | 14.33 | 75.00 | |
| TOTAL | | 32 | | | | | | | | | | |

ITEM NUMBER 5

| OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | 293 |
| C 1 | 1 | 30 | 93.8 | C | .04 | -.06 | .07 | -.10 | C | 16.10 | 75.87 | - 140 |
| 2 | 0 | 2 | 6.3 | | -.04 | .06 | -.07 | .11 | | 15.50 | 77.50 | |
| TOTAL | | 32 | | | | | | | | | | |

281

ERIC

TEST NO 1 ACHIEVENENT MONITORING KU SUBTEST 6 SUBTRACTION ALGORITHM

ITEM NUMBER 6

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEAN | TT MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| C 1 | 1 | 32 | 100.0 | C | .00 | .00 | .00 | .00 | C | 16.06 | 75.97 |
| 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| TOTAL | | 32 | | | | | | | | | |

COEFFICIENTS OF CORRELATION — MEANS

868 − 443

ITEM NUMBER 7

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEAN | TT MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| C 1 | 1 | 27 | 84.4 | C | .49 | .39 | .73 | .57 | C | 16.89 | 77.15 |
| 2 | 0 | 5 | 15.6 | | -.49 | -.39 | -.75 | -.59 | | 11.60 | 69.60 |
| TOTAL | | 32 | | | | | | | | | |

COEFFICIENTS OF CORRELATION — MEANS

53 − 9

ITEM NUMBER 8

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEAN | TT MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| C 1 | 1 | 29 | 90.6 | C | .50 | .33 | .82 | .55 | C | 16.69 | 76.72 |
| 2 | 0 | 3 | 9.4 | | -.50 | -.33 | -.87 | -.58 | | 10.00 | 68.67 |
| TOTAL | | 32 | | | | | | | | | |

COEFFICIENTS OF CORRELATION — MEANS

34 − 6

ITEM NUMBER 9

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEAN | TT MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| C 1 | 1 | 29 | 90.6 | C | .64 | .36 | 1.05 | .60 | C | 16.86 | 76.79 |
| 2 | 0 | 3 | 9.4 | | -.64 | -.36 | -1.11 | -.63 | | 8.33 | 68.00 |
| TOTAL | | 32 | | | | | | | | | |

COEFFICIENTS OF CORRELATION — MEANS

67 − 8

ITEM NUMBER 10

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEAN | TT MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| C 1 | 1 | 27 | 84.4 | C | .25 | .24 | .37 | .36 | C | 16.48 | 76.70 |
| 2 | 0 | 5 | 15.6 | | -.25 | -.24 | -.38 | -.37 | | 13.80 | 72.00 |
| TOTAL | | 32 | | | | | | | | | |

COEFFICIENTS OF CORRELATION — MEANS

70 − 39

183

TEST NO 1 ACHIEVEMENT MONITORING 10 AU SUBTEST 6 SUBTRACTION ALGORITHM

ITEM NUMBER 11

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| C 1 | 1 | 27 | 84.4 | C | .56 | .30 | .83 | .45 | C | 17.00 | 76.89 |
| 2 | 0 | 5 | 15.6 | | -.56 | -.30 | -.85 | -.46 | | 11.00 | 71.00 |
| TOTAL | | 32 | | | | | | | | | |

COEFFICIENTS OF CORRELATION — MEANS

53 − 34

ITEM NUMBER 12

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| C 1 | 1 | 28 | 87.5 | C | .56 | .31 | .87 | .47 | C | 16.89 | 76.79 |
| 2 | 0 | 4 | 12.5 | | -.56 | -.31 | -.90 | -.49 | | 10.25 | 70.25 |
| TOTAL | | 32 | | | | | | | | | |

COEFFICIENTS OF CORRELATION — MEANS

83 − 27

ITEM NUMBER 13

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| C 1 | 1 | 24 | 75.0 | C | .67 | .47 | .91 | .63 | C | 17.58 | 77.87 |
| 2 | 0 | 8 | 25.0 | | -.67 | -.47 | -.92 | -.64 | | 11.50 | 70.25 |
| TOTAL | | 32 | | | | | | | | | |

COEFFICIENTS OF CORRELATION — MEANS

864 − 225

ITEM NUMBER 14

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| C 1 | 1 | 24 | 75.0 | C | .60 | .38 | .81 | .52 | C | 17.42 | 77.54 |
| 2 | 0 | 8 | 25.0 | | -.60 | -.38 | -.82 | -.52 | | 12.00 | 71.25 |
| TOTAL | | 32 | | | | | | | | | |

COEFFICIENTS OF CORRELATION — MEANS

774 − 529

ITEM NUMBER 15

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 2 | 6.3 | | -.37 | -.38 | -.72 | -.75 | | 10.50 | 65.50 |
| C 1 | 1 | 24 | 75.0 | C | .67 | .72 | .91 | .98 | C | 17.58 | 78.92 |
| 2 | 0 | 6 | 18.8 | | -.52 | -.56 | -.75 | -.82 | | 11.83 | 67.67 |
| TOTAL | | 32 | | | | | | | | | |

COEFFICIENTS OF CORRELATION — MEANS

952 − 843





ERIC

TEST NO 1 ACHIEVEMENT MONITORING AU SUBTEST 6 SUBTRACTION ALGORITHM

ITEM NUMBER 16

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 2 | 6.3 | | -.37 | -.38 | -.72 | -.75 | | 10.50 | 65.50 |
| C 1 | 1 | 20 | 62.5 | C | .74 | .71 | .94 | .90 | C | 18.30 | 79.85 |
| 2 | 0 | 10 | 31.3 | | -.58 | -.54 | -.76 | -.71 | | 12.70 | 70.30 |
| TOTAL | | 32 | | | | | | | | | |

COEFFICIENTS OF CORRELATION MEANS

614 − 384

ITEM NUMBER 17

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 3 | 9.4 | | -.33 | -.27 | -.58 | -.47 | | 12.00 | 70.00 |
| C 1 | 1 | 22 | 68.8 | C | .79 | .65 | 1.03 | .85 | C | 18.14 | 79.09 |
| 2 | 0 | 7 | 21.9 | | -.65 | -.54 | -.91 | -.76 | | 11.29 | 68.71 |
| TOTAL | | 32 | | | | | | | | | |

COEFFICIENTS OF CORRELATION MEANS

929 − 536

ITEM NUMBER 18

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 5 | 15.6 | | -.38 | -.45 | -.58 | -.68 | | 12.60 | 68.60 |
| C 1 | 1 | 19 | 59.4 | C | .62 | .54 | .78 | .68 | C | 18.05 | 79.11 |
| 2 | 0 | 8 | 25.0 | | -.38 | -.23 | -.52 | -.32 | | 13.50 | 73.12 |
| TOTAL | | 32 | | | | | | | | | |

COEFFICIENTS OF CORRELATION MEANS

639 − 243

ITEM NUMBER 19

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 9 | 28.1 | | -.37 | -.43 | -.49 | -.57 | | 13.78 | 71.11 |
| C 1 | 1 | 9 | 28.1 | C | .61 | .47 | .82 | .63 | C | 19.89 | 81.33 |
| 2 | 0 | 14 | 43.8 | | -.22 | -.04 | -.28 | -.05 | | 15.07 | 75.64 |
| TOTAL | | 32 | | | | | | | | | |

COEFFICIENTS OF CORRELATION MEANS

824 − 628

ITEM NUMBER 20

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 10 | 31.3 | | -.37 | -.39 | -.49 | -.51 | | 13.90 | 71.50 |
| C 1 | 1 | 8 | 25.0 | C | .58 | .52 | .79 | .71 | C | 20.00 | 82.37 |
| 2 | 0 | 14 | 43.8 | | -.16 | -.09 | -.20 | -.12 | | 15.36 | 75.21 |
| TOTAL | | 32 | | | | | | | | | |

COEFFICIENTS OF CORRELATION MEANS

942 − 595

185



287

TEST NO 1 ACHIEVEMENT MONITORING 4U SUBTEST 6 SUBTRACTION ALGORITHM

ITEM NUMBER 21

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 12 | 37.5 | | -.26 | -.35 | -.35 | -.45 | | 14.67 | 72.75 |
| C 1 | 1 | 6 | 18.8 | C | .59 | .53 | .65 | .77 | C | 20.83 | 83.83 |
| 2 | 0 | 14 | 43.8 | | -.19 | -.08 | -.24 | -.10 | | 15.21 | 75.36 |
| TOTAL | | 32 | | | | | | | | | |

COEFFICIENTS OF CORRELATION MEANS

328 − 169

ITEM NUMBER 22

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 14 | 43.8 | | -.14 | -.22 | -.18 | -.28 | | 15.43 | 74.21 |
| C 1 | 1 | 7 | 21.9 | C | .57 | .45 | .80 | .63 | C | 20.29 | 82.00 |
| 2 | 0 | 11 | 34.4 | | -.35 | -.16 | -.45 | -.21 | | 14.18 | 74.36 |
| TOTAL | | 32 | | | | | | | | | |

COEFFICIENTS OF CORRELATION MEANS

710 − 469

ITEM NUMBER 23

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 16 | 50.0 | | -.11 | -.19 | -.14 | -.24 | | 15.63 | 74.62 |
| C 1 | 1 | 0 | .0 | C | .00 | .00 | .00 | .00 | C | .00 | .00 |
| 2 | 0 | 16 | 50.0 | | .11 | .19 | .14 | .24 | | 16.50 | 77.31 |
| TOTAL | | 32 | | | | | | | | | |

COEFFICIENTS OF CORRELATION MEANS

803 − 427

ITEM NUMBER 24

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 17 | 53.1 | | -.10 | -.15 | -.12 | -.18 | | 15.71 | 75.00 |
| C 1 | 1 | 0 | .0 | C | .00 | .00 | .00 | .00 | C | .00 | .00 |
| 2 | 0 | 15 | 46.9 | | .10 | .15 | .12 | .18 | | 16.47 | 77.07 |
| TOTAL | | 32 | | | | | | | | | |

COEFFICIENTS OF CORRELATION MEANS

600 − 212





ERIC

ITEM NUMBER 1

| | OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT | ITEM DESCRIPTIONS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| C | 1 | 1 | 28 | 90.3 | C | .32 | .11 | .52 | .18 | C | 12.11 | 70.86 | |
| | 2 | 0 | 3 | 9.7 | | -.32 | -.11 | -.54 | -.19 | | 10.33 | 67.00 | Numerousness |
| | 3 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | Writes 0-99 |
| | 4 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| | TOTAL | | 31 | | | | | | | | | | |

ITEM NUMBER 2

| | OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 0 | 1 | 3.2 | | -.10 | -.10 | -.25 | -.24 | | 11.00 | 65.00 | |
| C | 2 | 1 | 29 | 93.5 | C | .23 | .13 | .40 | .23 | C | 12.03 | 70.83 | Numerousness |
| | 3 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | Represents 0-99 |
| | 4 | 0 | 1 | 3.2 | | -.21 | -.08 | -.52 | -.20 | | 10.00 | 66.00 | |
| | TOTAL | | 31 | | | | | | | | | | |

ITEM NUMBER 3

| | OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| C | 1 | 1 | 29 | 93.5 | C | .54 | .33 | .95 | .59 | C | 12.17 | 71.38 | |
| | 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | Problem Solving (A) |
| | 3 | 0 | 2 | 6.5 | | -.54 | -.33 | -1.06 | -.65 | | 8.50 | 57.50 | Comparison 11-15 |
| | 4 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| | TOTAL | | 31 | | | | | | | | | | |

ITEM NUMBER 4

| | OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| | 2 | 0 | 1 | 3.2 | | -.32 | -.10 | -.79 | -.24 | | 9.00 | 65.00 | Problem Solving (A) |
| C | 3 | 1 | 27 | 87.1 | C | .56 | .34 | .87 | .52 | C | 12.30 | 71.81 | Add-part part whole 0-99 |
| | 4 | 0 | 3 | 9.7 | | -.45 | -.33 | -.71 | -.56 | | 9.67 | 60.33 | |
| | TOTAL | | 31 | | | | | | | | | | |

ITEM NUMBER 11

| | OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST | TT | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| | 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | Problem Solving (B) |
| C | 3 | 1 | 28 | 90.3 | C | .18 | .09 | .30 | .15 | C | 12.04 | T0.T9 | Subt-part part whole-addend |
| | 4 | 0 | 3 | 9.T | | -.16 | -.09 | -.32 | -.16 | | 11.00 | 6T.6T | 11-25 |
| | TOTAL | | 31 | | | | | | | | | | |

ITEM NUMBER 12

| | OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST | TT | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| C | 1 | 1 | 24 | TT.4 | C | .49 | .28 | .68 | .39 | C | 12.3T | T2.04 | |
| | 2 | 0 | 2 | 6.5 | | -.15 | -.03 | -.29 | -.05 | | 11.00 | 69.50 | Problem Solving (B) |
| | 3 | 0 | 5 | 16.1 | | -.46 | -.30 | -.69 | -.46 | | 10.20 | 63.40 | Subt-join-addend 0-99 |
| | 4 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| | TOTAL | | 31 | | | | | | | | | | |

188

LERTAP 2.0 — SUMMARY ITEM STATISTICS — PAGE 17

TEST NO 1 ACHIEVEMENT MONITORING 10 — SUBTEST 1 OBJECTIVES TEST

ITEM NUMBER 9

| | OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST | TT | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 0 | 2 | 6.5 | | -.23 | -.33 | -.44 | -.65 | | 10.50 | ET.50 | |
| C | 2 | 1 | 29 | 93.5 | C | .23 | .33 | .40 | .59 | C | 12.03 | T1.38 | Order, Place Value |
| | 3 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | Ordering 0-99 |
| | 4 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| | TOTAL | | 31 | | | | | | | | | | |

ITEM NUMBER 8

| | OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST | TT | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| C | 1 | 1 | 9 | 29.0 | C | .58 | .60 | .TT | .T9 | C | 13.44 | 80.00 | |
| | 2 | 0 | 9 | 29.0 | | -.23 | -.03 | -.31 | -.04 | | 11.33 | T0.00 | Order, Place Value |
| | 3 | 0 | T | 22.6 | | -.16 | -.28 | -.23 | -.39 | | 11.43 | 65.14 | Place Value 0-99 |
| | 4 | 0 | 6 | 19.4 | | -.23 | -.38 | -.33 | -.51 | | 11.1T | 63.1T | |
| | TOTAL | | 31 | | | | | | | | | | |

292

293

ERIC

ITEM NUMBER

| | OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 0 | 1 | 3.2 | | .12 | .19 | .29 | .46 | | 13.00 | 81.00 |
| C | 2 | 1 | 30 | 96.8 | C | -.12 | -.19 | -.23 | -.36 | C | 11.90 | 70.13 |
| | 3 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| | 4 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| | TOTAL | | 31 | | | | | | | | | |

COEFFICIENTS OF CORRELATION — MEANS

Sentence Writing (A)
Subt-simple separating 11-15

ITEM NUMBER #10

| | OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 0 | 7 | 22.6 | | -.58 | -.37 | -.81 | -.51 | | 10.14 | 63.57 |
| | 2 | 0 | 1 | 3.2 | | -.10 | -.13 | -.25 | -.33 | | 11.00 | 63.00 |
| C | 3 | 1 | 23 | 74.2 | C | .60 | .40 | .81 | .54 | C | 12.52 | 72.91 |
| | 4 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| | TOTAL | | 31 | | | | | | | | | |

COEFFICIENTS OF CORRELATION — MEANS

Sentence Writing (A)
Subt-comparison 0-99

LERTAP 2.0 — SUMMARY ITEM STATISTICS — PAGE 18

TEST NO 1 ACHIEVEMENT MONITORING AV — SUBTEST 1 OBJECTIVES TEST

ITEM NUMBER #11

| | OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 0 | 4 | 12.9 | | -.62 | -.19 | -.99 | -.30 | | 9.25 | 65.50 |
| | 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| C | 3 | 1 | 26 | 83.9 | C | .62 | .27 | .91 | .40 | C | 12.38 | 71.69 |
| | 4 | 0 | 1 | 3.2 | | -.10 | -.21 | -.25 | -.50 | | 11.00 | 59.00 |
| | TOTAL | | 31 | | | | | | | | | |

COEFFICIENTS OF CORRELATION — MEANS

Sentence Writing (B)
Subt-part part whole-addend 11-15

ITEM NUMBER #12

| | OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 0 | 1 | 3.2 | | -.32 | -.10 | -.79 | -.24 | | 9.00 | 65.00 |
| C | 2 | 1 | 30 | 96.8 | C | .32 | .10 | .62 | .19 | C | 12.03 | 70.67 |
| | 3 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| | 4 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| | TOTAL | | 31 | | | | | | | | | |

COEFFICIENTS OF CORRELATION — MEANS

Sentence Writing (B)
Add-simple joining 0-99

189

TEST NO 1 ACHIEVEMENT MONITORING 10 AV SUBTEST 1 OBJECTIVES TEST



ITEM NUMBER 13

| OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| C 1 | 1 | 30 | 96.8 | C | .10 | -.06 | .20 | -.12 | C | 11.97 | 70.37 | |
| 2 | 0 | 1 | 3.2 | | -.10 | .06 | -.25 | .15 | | 11.00 | 74.00 | Algorithms |
| 3 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | Addition Algorithm |
| 4 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| TOTAL | | 31 | | | | | | | | | | |

ITEM NUMBER 14

| OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 2 | 6.5 | | -.07 | -.10 | -.13 | -.20 | | 11.50 | 66.50 | |
| 2 | 0 | 1 | 3.2 | | -.32 | -.10 | -.79 | -.24 | | 9.00 | 65.00 | Algorithms |
| C 3 | 1 | 28 | 90.3 | C | .25 | .14 | .41 | .23 | C | 12.07 | 70.96 | Subtraction Algorithm |
| 4 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| TOTAL | | 31 | | | | | | | | | | |

LERTAP 2.0

TEST NO 1 ACHIEVEMENT MONITORING AV

SUMMARY ITEM STATISTICS

SUBTEST 2 SENTENCE WRITING FREE RESPONSE

ITEM NUMBER 1

| | OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT | ITEM DESCRIPTIONS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | Sentence Writing |
| C | 1 | 1 | 31 | 100.0 | C | .00 | .00 | .00 | .00 | C | 3.58 | T0.48 | Add-part part whole 11-15 |
| | 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| | TOTAL | | 31 | | | | | | | | | | |

ITEM NUMBER 2

| | OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | Sentence Writing |
| C | 1 | 1 | 31 | 100.0 | C | .00 | .00 | .00 | .00 | C | 3.58 | T0.48 | Subt-simple separating 0-99 |
| | 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| | TOTAL | | 31 | | | | | | | | | | |

ITEM NUMBER 3

| | OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | Sentence Writing |
| C | 1 | 1 | 30 | 96.8 | C | .21 | -.03 | .42 | -.05 | C | 3.60 | T0.43 | Subt-part part whole-addend |
| | 2 | 0 | 1 | 3.2 | | -.21 | .03 | -.53 | .07 | | 3.00 | T2.00 | 0-99 |
| | TOTAL | | 31 | | | | | | | | | | |

ITEM NUMBER 4

| | OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | Sentence Writing |
| C | 1 | 1 | 19 | 61.3 | C | .94 | .58 | 1.19 | .73 | C | 3.95 | T5.16 | Subt-join-addend 11-15 |
| | 2 | 0 | 12 | 38.7 | | -.94 | -.58 | -1.19 | -.73 | | 3.00 | 63.08 | |
| | TOTAL | | 31 | | | | | | | | | | |

191

TEST NO 1 ACHIEVEMENT MONITORING AV SUBTEST 3 ADDITION FACTS

192

ITEM DESCRIPTIONS

ITEM NUMBER 1

| OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| C 1 | 1 | 29 | 93.5 | C | .71 | .18 | 1.25 | .32 | C | 11.10 | 70.97 |
| 2 | 0 | 2 | 6.5 | | -.71 | -.18 | -1.39 | -.35 | | 7.00 | 63.50 |
| TOTAL | | 31 | | | | | | | | | |

3 + 1

ITEM NUMBER 2

| OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| C 1 | 1 | 30 | 96.8 | C | .62 | .21 | 1.21 | .40 | C | 11.00 | 70.87 |
| 2 | 0 | 1 | 3.2 | | -.62 | -.21 | -1.53 | -.50 | | 6.00 | 59.00 |
| TOTAL | | 31 | | | | | | | | | |

2 + 5

ITEM NUMBER 3

| OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 1 | 3.2 | | -.37 | -.04 | -.90 | -.11 | | 8.00 | 68.00 |
| C 1 | 1 | 30 | 96.8 | C | .37 | .04 | .71 | .09 | C | 10.93 | 70.57 |
| 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| TOTAL | | 31 | | | | | | | | | |

1 + 6

ITEM NUMBER 4

| OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 1 | 3.2 | | -.37 | -.04 | -.90 | -.11 | | 8.00 | 68.00 |
| C 1 | 1 | 30 | 96.8 | C | .37 | .04 | .71 | .09 | C | 10.93 | 70.57 |
| 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| TOTAL | | 31 | | | | | | | | | |

7 + 2

ITEM NUMBER 5

| OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| C 1 | 1 | 31 | 100.0 | C | .00 | .00 | .00 | .00 | C | 10.84 | 70.48 |
| 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| TOTAL | | 31 | | | | | | | | | |

2 + 6

TEST NO 1 ACHIEVEMENT MONITORING AV SUBTEST 3 ADDITION FACTS

ITEM NUMBER 6

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | MEANS TT | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .0 | .00 | |
| C 1 | 1 | 31 | 100.0 | C | .00 | .00 | .00 | .00 | C | 10.84 | 70.48 | 3 + 5 |
| 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| TOTAL | | 31 | | | | | | | | | | |

ITEM NUMBER 7

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | MEANS TT | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 1 | 3.2 | | -.24 | -.08 | -.58 | -.20 | | 9.00 | 66.00 | |
| C 1 | 1 | 29 | 93.5 | C | .34 | .01 | .60 | .02 | C | 10.97 | 70.52 | 4 + 8 |
| 2 | 0 | 1 | 3.2 | | -.24 | .06 | -.58 | .15 | | 9.00 | 74.00 | |
| TOTAL | | 31 | | | | | | | | | | |

ITEM NUMBER 8

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | MEANS TT | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 2 | 6.5 | | -.25 | .05 | -.48 | .10 | | 9.50 | 72.50 | |
| C 1 | 1 | 27 | 87.1 | C | .64 | .04 | .98 | .06 | C | 11.19 | 70.63 | 3 + 7 |
| 2 | 0 | 2 | 6.5 | | -.62 | -.10 | -1.21 | -.20 | | 7.50 | 66.50 | |
| TOTAL | | 31 | | | | | | | | | | |

ITEM NUMBER 9

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | MEANS TT | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 2 | 6.5 | | -.53 | -.30 | -1.03 | -.88 | | 8.00 | 59.00 | |
| C 1 | 1 | 29 | 93.5 | C | .53 | .30 | .93 | .52 | C | 11.03 | 71.28 | 5 + 9 |
| 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| TOTAL | | 31 | | | | | | | | | | |

ITEM NUMBER 10

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | MEANS TT | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 5 | 16.1 | | -.26 | .13 | -.39 | .20 | | 10.00 | 73.60 | |
| C 1 | 1 | 24 | 77.4 | C | .37 | -.05 | .52 | -.07 | C | 11.12 | 70.21 | 6 + 8 |
| 2 | 0 | 2 | 6.5 | | -.25 | -.12 | -.48 | -.23 | | 9.50 | 66.00 | |
| TOTAL | | 31 | | | | | | | | | | |



ERIC

LERTAP 2.0

TEST NO 1 ACHIEVEMENT MONITORING AV

SUMMARY ITEM STATISTICS

SUBTEST 3 ADDITION FACTS

194

ITEM NUMBER 11

| OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 6 | 19.4 | | -.29 | -.08 | -.42 | -.07 | | 10.00 | 69.50 | 8 + 7 |
| C 1 | 1 | 21 | 67.7 | C | .60 | .37 | .78 | .48 | C | 11.43 | 73.10 | |
| 2 | 0 | 4 | 12.9 | | -.50 | -.46 | -.80 | -.74 | | 9.00 | 58.25 | |
| TOTAL | | 31 | | | | | | | | | | |

ITEM NUMBER 12

| OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 2 | 6.5 | | -.16 | -.13 | -.30 | -.25 | | 10.00 | 65.50 | 4 + 9 |
| C 1 | 1 | 25 | 80.6 | C | .35 | .22 | .49 | .32 | C | 11.08 | 71.60 | |
| 2 | 0 | 4 | 12.9 | | -.30 | -.17 | -.47 | -.27 | | 9.75 | 66.00 | |
| TOTAL | | 31 | | | | | | | | | | |

TEST NO 1, ACHIEVEMENT MONITORING 4V

SUBTEST 4 SUBTRACTION FACTS

ITEM NUMBER 1

| | OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT | ITEM DESCRIPTIONS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| C | 1 | 1 | 31 | 100.0 | C | .00 | .00 | .00 | .00 | C | 10.90 | T0.48 | 7 - 1 |
| | 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| | TOTAL | | 31 | | | | | | | | | | |

ITEM NUMBER 2

| | OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| C | 1 | 1 | 31 | 100.0 | C | .00 | .00 | .00 | .00 | C | 10.90 | T0.48 | 8 - 4 |
| | 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| | TOTAL | | 31 | | | | | | | | | | |

ITEM NUMBER 3

| | OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| C | 1 | 1 | 31 | 100.0 | C | .00 | .00 | .00 | .00 | C | 10.90 | T0.48 | 9 - 5 |
| | 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| | TOTAL | | 31 | | | | | | | | | | |

ITEM NUMBER 4

| | OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 0 | 2 | 6.5 | | -.26 | -.05 | -.50 | -.10 | | 9.50 | 68.50 | |
| C | 1 | 1 | 29 | 93.5 | C | .26 | .08 | .45 | .09 | C | 11.00 | T0.62 | 7 - 4 |
| | 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| | TOTAL | | 31 | | | | | | | | | | |

ITEM NUMBER 5

| | OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 0 | 2 | 6.5 | | -.53 | -.32 | -1.03 | -.63 | | 8.00 | 58.00 | |
| C | 1 | 1 | 29 | 93.5 | C | .53 | .32 | .93 | .57 | C | 11.10 | T1.34 | 8 - 6 |
| | 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| | TOTAL | | 31 | | | | | | | | | | |

LEATAP 2.0

SUMMARY ITEM STATISTICS

TEST NO 1 ACHIEVEMENT MONITORING AV

SUBTEST 4 SUBTRACTION FACTS

196

ITEM NUMBER 6

| | OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | MEANS TT | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | COEFFICIENTS OF CORRELATION | | | | | | | |
| | 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| C | 1 | 1 | 31 | 100.0 | C | .00 | .00 | .00 | .00 | C | 10.90 | T0.48 | 4 - 3 |
| | 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| | TOTAL | | 31 | | | | | | | | | | |

ITEM NUMBER 7

| | OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | MEANS TT | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | COEFFICIENTS OF CORRELATION | | | | | | | |
| | 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| C | 1 | 1 | 28 | 90.3 | C | .28 | -.1T | .46 | -.2T | C | 11.04 | 69.93 | 11 - 2 |
| | 2 | 0 | 3 | 9.T | | -.28 | .1T | -.48 | .29 | | 9.6T | TS.6T | |
| | TOTAL | | 31 | | | | | | | | | | |

ITEM NUMBER 8

| | OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | MEANS TT | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | COEFFICIENTS OF CORRELATION | | | | | | | |
| | 0 | 0 | 5 | 16.1 | | -.56 | -.09 | -.8T | -.13 | | 9.00 | 68.40 | |
| C | 1 | 1 | 23 | T4.2 | C | .T8 | .21 | 1.05 | .28 | C | 11.5T | T1.T4 | 13 - 8 |
| | 2 | 0 | 3 | 9.7 | | -.43 | -.20 | -.T4 | -.34 | | 9.00 | 64.33 | |
| | TOTAL | | 31 | | | | | | | | | | |

ITEM NUMBER 9

| | OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | MEANS TT | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | COEFFICIENTS OF CORRELATION | | | | | | | |
| | 0 | 0 | 4 | 12.9 | | -.64 | -.41 | -1.02 | -.66 | | 8.50 | 59.50 | |
| C | 1 | 1 | 25 | 80.6 | C | .T6 | .42 | 1.08 | .60 | C | 11.44 | 72.60 | 12 - 7 |
| | 2 | 0 | 2 | 6.5 | | -.35 | -.12 | -.6T | -.23 | | 9.00 | 66.00 | |
| | TOTAL | | 31 | | | | | | | | | | |

ITEM NUMBER 10

| | OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | MEANS TT | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | COEFFICIENTS OF CORRELATION | | | | | | | |
| | 0 | 0 | 2 | 6.5 | | -.26 | -.05 | -.50 | -.10 | | 9.50 | 68.50 | |
| C | 1 | 1 | 26 | 83.9 | C | .64 | .3T | .94 | .55 | C | 11.31 | T2.15 | 15 - 9 |
| | 2 | 0 | 3 | 9.7 | | -.58 | -.42 | -1.00 | -.73 | | 8.33 | 5T.33 | |
| | TOTAL | | 31 | | | | | | | | | | |





ERIC

TEST NO 1 ACHIEVEMENT MONITORING AV 10 SUBTEST 4 SUBTRACTION FACTS

ITEM NUMBER 11

| | OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| C | 1 | 1 | 30 | 96.8 | C | .11 | .13 | .22 | .26 | C | 10.93 | 70.73 | 10 - 2 |
| | 2 | 0 | 1 | 3.2 | | -.11 | -.13 | -.28 | -.33 | | 10.00 | 65.00 | |
| | TOTAL | | 31 | | | | | | | | | | |

ITEM NUMBER 12

| | OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 0 | 2 | 6.5 | | -.26 | .12 | -.50 | .23 | | 9.50 | 75.00 | 16 - 7 |
| C | 1 | 1 | 24 | 77.4 | C | .66 | -.07 | .91 | -.10 | C | 11.42 | 70.08 | |
| | 2 | 0 | 5 | 16.1 | | -.58 | .00 | -.87 | .01 | | 9.00 | 70.60 | |
| | TOTAL | | 31 | | | | | | | | | | |

TEST NO 1 ACHIEVEMENT MONITORING AV SUBTEST 5 ADDITION ALGORITHM

ITEM NUMBER 1

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | MEANS TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| C 1 | 1 | 30 | 96.8 | C | .06 | .37 | .11 | .71 | C | 19.37 | 71.17 |
| 2 | 0 | 1 | 3.2 | | -.06 | -.37 | -.14 | -.90 | | 18.00 | 50.00 |
| TOTAL | | 31 | | | | | | | | | |

ITEM DESCRIPTIONS: - 53 + 34

ITEM NUMBER 2

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | MEANS TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| C 1 | 1 | 31 | 100.0 | C | .00 | .00 | .00 | .00 | C | 19.32 | 70.48 |
| 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| TOTAL | | 31 | | | | | | | | | |

ITEM DESCRIPTIONS: 30 + 21

ITEM NUMBER 3

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | MEANS TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| C 1 | 1 | 29 | 93.5 | C | .11 | .12 | .20 | .20 | C | 19.45 | 70.79 |
| 2 | 0 | 2 | 6.5 | | -.11 | -.12 | -.22 | -.23 | | 17.50 | 66.00 |
| TOTAL | | 31 | | | | | | | | | |

ITEM DESCRIPTIONS: 27 + 62

ITEM NUMBER 4

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | MEANS TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| C 1 | 1 | 29 | 93.5 | C | .29 | .08 | .52 | .14 | C | 19.66 | 70.69 |
| 2 | 0 | 2 | 6.5 | | -.29 | -.08 | -.57 | -.15 | | 14.50 | 67.50 |
| TOTAL | | 31 | | | | | | | | | |

ITEM DESCRIPTIONS: 503 + 293

ITEM NUMBER 5

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | MEANS TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| C 1 | 1 | 30 | 96.8 | C | .52 | .31 | 1.01 | .61 | C | 19.73 | 71.07 |
| 2 | 0 | 1 | 3.2 | | -.52 | -.31 | -1.28 | -.77 | | 7.00 | 53.00 |
| TOTAL | | 31 | | | | | | | | | |

ITEM DESCRIPTIONS: 265 + 314

312

313

198

TEST NO. 1 ACHIEVEMENT MONITORING AV SUBTEST 5 ADDITION ALGORITHM

ITEM NUMBER 6

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | MEANS TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| C 1 | 1 | 30 | 96.8 | C | .52 | .31 | 1.01 | .61 | C | 19.73 | 71.07 |
| 2 | 0 | 1 | 3.2 | | -.52 | -.31 | -1.28 | -.77 | | 7.00 | 53.00 |
| TOTAL | | 31 | | | | | | | | | |

COEFFICIENTS OF CORRELATION

MEANS

ITEM NUMBER 7

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | MEANS TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| C 1 | 1 | 28 | 90.3 | C | .18 | .09 | .29 | .15 | C | 19.57 | 70.79 |
| 2 | 0 | 3 | 9.7 | | -.18 | -.09 | -.30 | -.16 | | 17.00 | 67.67 |
| TOTAL | | 31 | | | | | | | | | |

COEFFICIENTS OF CORRELATION

MEANS

ITEM NUMBER 8

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | MEANS TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 1 | 3.2 | | -.35 | -.21 | -.86 | -.50 | | 11.00 | 59.00 |
| C 1 | 1 | 29 | 93.5 | C | .63 | .37 | 1.11 | .66 | C | 20.03 | 71.48 |
| 2 | 0 | 1 | 3.2 | | -.52 | -.31 | -1.28 | -.77 | | 7.00 | 53.00 |
| TOTAL | | 31 | | | | | | | | | |

COEFFICIENTS OF CORRELATION

MEANS

ITEM NUMBER 9

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | MEANS TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| C 1 | 1 | 29 | 93.5 | C | .48 | .30 | .84 | .52 | C | 19.86 | 71.28 |
| 2 | 0 | 2 | 6.5 | | -.48 | -.30 | -.93 | -.58 | | 11.50 | 59.00 |
| TOTAL | | 31 | | | | | | | | | |

COEFFICIENTS OF CORRELATION

MEANS

ITEM NUMBER 10

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | MEANS TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| C 1 | 1 | 30 | 96.8 | C | .27 | .37 | .52 | .71 | C | 19.53 | 71.17 |
| 2 | 0 | 1 | 3.2 | | -.27 | -.37 | -.65 | -.90 | | 13.00 | 50.00 |
| TOTAL | | 31 | | | | | | | | | |

332
+ 246

7
+ 56

68
+ 8

79
+ 7

29
+ 64

315

TEST NO 1 ACHIEVEMENT MONITORING AV SUBTEST 5 ADDITION ALGORITHM

ITEM NUMBER 11

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEAN | TT MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| C 1 | 1 | 29 | 93.5 | C | .11 | .22 | .20 | .38 | C | 19.45 | 71.07 |
| 2 | 0 | 2 | 6.5 | | -.11 | -.22 | -.22 | -.43 | | 17.50 | 62.00 |
| TOTAL | | 31 | | | | | | | | | |

ITEM NUMBER 12

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEAN | TT MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 1 | 3.2 | | -.35 | -.21 | -.86 | -.50 | | 11.00 | 59.00 |
| C 1 | 1 | 23 | 74.2 | C | .37 | .24 | .50 | .32 | C | 20.26 | 71.91 |
| 2 | 0 | 7 | 22.6 | | -.24 | -.16 | -.33 | -.23 | | 17.43 | 67.43 |
| TOTAL | | 31 | | | | | | | | | |

ITEM NUMBER 13

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEAN | TT MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 1 | 3.2 | | -.31 | -.21 | -.76 | -.50 | | 12.00 | 59.00 |
| C 1 | 1 | 23 | 74.2 | C | .81 | .55 | 1.10 | .74 | C | 21.39 | 73.78 |
| 2 | 0 | 7 | 22.6 | | -.72 | -.49 | -1.00 | -.68 | | 13.57 | 61.29 |
| TOTAL | | 31 | | | | | | | | | |

ITEM NUMBER 14

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEAN | TT MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 1 | 3.2 | | -.31 | -.21 | -.76 | -.50 | | 12.00 | 59.00 |
| C 1 | 1 | 21 | 67.7 | C | .76 | .49 | .98 | .64 | C | 21.57 | 73.95 |
| 2 | 0 | 9 | 29.0 | | -.66 | -.43 | -.87 | -.57 | | 14.89 | 63.67 |
| TOTAL | | 31 | | | | | | | | | |

ITEM NUMBER 15

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEAN | TT MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 2 | 6.5 | | -.48 | -.30 | -.93 | -.58 | | 11.50 | 59.00 |
| C 1 | 1 | 24 | 77.4 | C | .85 | .55 | 1.17 | .76 | C | 21.29 | 73.50 |
| 2 | 0 | 5 | 16.1 | | -.64 | -.42 | -.97 | -.64 | | 13.00 | 60.60 |
| TOTAL | | 31 | | | | | | | | | |

45
+ 28

77
+ 95

426
+ 458

239
+ 653

115
+ 875

200

TEST NO 1 ACHIEVEMENT MONITORING AV SUBTEST 5 ADDITION ALGORITHM

ITEM NUMBER 16

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | MEANS TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 1 | 3.2 | | -.31 | -.21 | -.76 | -.50 | | 12.00 | 59.00 |
| C 1 | 1 | 27 | 87.1 | C | .45 | .38 | .70 | .58 | C | 20.07 | 71.96 |
| 2 | 0 | 3 | 9.7 | | -.33 | -.30 | -.57 | -.53 | | 15.00 | 61.00 |
| TOTAL | | 31 | | | | | | | | | |

ITEM NUMBER 17

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | MEANS TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 1 | 3.2 | | -.31 | -.21 | -.76 | -.50 | | 12.00 | 59.00 |
| C 1 | 1 | 29 | 93.5 | C | .60 | .37 | 1.05 | .66 | C | 20.00 | 71.48 |
| 2 | 0 | 1 | 3.2 | | -.52 | -.31 | -1.28 | -.77 | | 7.00 | 53.00 |
| TOTAL | | 31 | | | | | | | | | |

ITEM NUMBER 18

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | MEANS TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 1 | 3.2 | | -.31 | -.21 | -.76 | -.50 | | 12.00 | 59.00 |
| C 1 | 1 | 27 | 87.1 | C | .47 | .35 | .73 | .54 | C | 20.11 | 71.85 |
| 2 | 0 | 3 | 9.7 | | -.35 | -.27 | -.61 | -.47 | | 14.67 | 62.00 |
| TOTAL | | 31 | | | | | | | | | |

ITEM NUMBER 19

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | MEANS TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 1 | 3.2 | | -.18 | -.08 | -.45 | -.20 | | 15.00 | 66.00 |
| C 1 | 1 | 23 | 74.2 | C | .68 | .45 | .91 | .60 | C | 21.04 | 73.17 |
| 2 | 0 | 7 | 22.6 | | -.63 | -.43 | -.88 | -.60 | | 14.29 | 62.29 |
| TOTAL | | 31 | | | | | | | | | |

ITEM NUMBER 20

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | MEANS TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 4 | 12.9 | | -.07 | -.09 | -.12 | -.15 | | 16.50 | 68.00 |
| C 1 | 1 | 21 | 67.7 | C | .66 | .51 | .86 | .66 | C | 21.29 | 74.05 |
| 2 | 0 | 6 | 19.4 | | -.72 | -.52 | -1.03 | -.75 | | 13.00 | 59.67 |
| TOTAL | | 31 | | | | | | | | | |

174
+ 642

583
+ 241

186
+ 570

263
+ 459

359
+ 265

201

TEST NO 1 ACHIEVEMENT MONITORING AV SUBTEST 5 ADDITION ALGORITHM

202

ITEM NUMBER 21

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEAN | TT MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 4 | 12.9 | | -.34 | -.28 | -.54 | -.45 | | 15.50 | 63.00 |
| C 1 | 1 | 14 | 45.2 | C | .64 | .66 | .80 | .82 | C | 22.36 | 77.86 |
| 2 | 0 | 13 | 41.9 | | -.41 | -.47 | -.52 | -.59 | | 17.23 | 64.85 |
| TOTAL | | 31 | | | | | | | | | |

767 / + 434

ITEM NUMBER 22

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEAN | TT MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 7 | 22.6 | | -.36 | -.30 | -.50 | -.41 | | 16.43 | 64.86 |
| C 1 | 1 | 13 | 41.9 | C | .69 | .68 | .88 | .86 | C | 22.85 | 78.62 |
| 2 | 0 | 11 | 35.5 | | -.40 | -.44 | -.51 | -.56 | | 17.00 | 64.45 |
| TOTAL | | 31 | | | | | | | | | |

19 / 64 / + 58

ITEM NUMBER 23

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEAN | TT MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 8 | 25.8 | | -.51 | -.41 | -.68 | -.56 | | 15.63 | 63.37 |
| C 1 | 1 | 19 | 61.3 | C | .73 | .60 | .93 | .76 | C | 21.84 | 75.32 |
| 2 | 0 | 4 | 12.9 | | -.41 | -.33 | -.65 | -.52 | | 14.75 | 61.75 |
| TOTAL | | 31 | | | | | | | | | |

67 / 25 / + 22

ITEM NUMBER 24

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEAN | TT MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 10 | 32.3 | | -.48 | -.46 | -.63 | -.60 | | 16.30 | 63.70 |
| C 1 | 1 | 11 | 35.5 | C | .66 | .65 | .85 | .84 | C | 23.18 | 79.45 |
| 2 | 0 | 10 | 32.3 | | -.20 | -.21 | -.25 | -.27 | | 18.10 | 67.40 |
| TOTAL | | 31 | | | | | | | | | |

58 / 98 / + 85

TEST NO 1 ACHIEVEMENT MONITORING AV SUBTEST 6 SUBTRACTION ALGORITHM

ITEM NUMBER 1

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEAN | TT MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| C 1 | 1 | 29 | 93.5 | C | .34 | .24 | .60 | .43 | C | 14.38 | 71.14 |
| 2 | 0 | 2 | 6.5 | | -.34 | -.24 | -.66 | -.48 | | 7.00 | 61.00 |
| TOTAL | | 31 | | | | | | | | | |

ITEM DESCRIPTIONS: 67 - 42

ITEM NUMBER 2

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEAN | TT MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| C 1 | 1 | 30 | 96.8 | C | .48 | .37 | .92 | .71 | C | 14.37 | 71.17 |
| 2 | 0 | 1 | 3.2 | | -.48 | -.37 | -1.17 | -.90 | | .00 | 50.00 |
| TOTAL | | 31 | | | | | | | | | |

ITEM DESCRIPTIONS: 56 - 25

ITEM NUMBER 3

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEAN | TT MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| C 1 | 1 | 28 | 90.3 | C | .30 | .18 | .49 | .29 | C | 14.43 | 71.07 |
| 2 | 0 | 3 | 9.7 | | -.30 | -.18 | -.52 | -.30 | | 9.00 | 65.00 |
| TOTAL | | 31 | | | | | | | | | |

ITEM DESCRIPTIONS: 88 - 76

ITEM NUMBER 4

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEAN | TT MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| C 1 | 1 | 28 | 90.3 | C | .61 | .53 | 1.00 | .86 | C | 14.96 | 72.25 |
| 2 | 0 | 3 | 9.7 | | -.61 | -.53 | -1.05 | -.91 | | 4.00 | 54.00 |
| TOTAL | | 31 | | | | | | | | | |

ITEM DESCRIPTIONS: 698 - 457

ITEM NUMBER 5

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEAN | TT MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 1 | 3.2 | | -.37 | -.37 | -.92 | -.90 | | 3.00 | 50.00 |
| C 1 | 1 | 28 | 90.3 | C | .53 | .56 | .86 | .92 | C | 14.82 | 72.36 |
| 2 | 0 | 2 | 6.5 | | -.37 | -.41 | -.71 | -.80 | | 6.50 | 54.50 |
| TOTAL | | 31 | | | | | | | | | |

ITEM DESCRIPTIONS: 482 - 231

LERTAP 2.0

TEST NO 1 ACHIEVEMENT MONITORING AV

SUMMARY ITEM STATISTICS

SUBTEST 6 SUBTRACTION ALGORITHM

ITEM NUMBER 6

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | MEANS TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 1 | 3.2 | | -.37 | -.37 | -.92 | -.90 | | 3.00 | 50.00 |
| C 1 | 1 | 29 | 93.5 | C | .61 | .53 | 1.08 | .93 | C | 14.76 | 71.90 |
| 2 | 0 | 1 | 3.2 | | -.48 | -.37 | -1.17 | -.90 | | .00 | 50.00 |
| TOTAL | | 31 | | | | | | | | | |

ITEM NUMBER 7

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | MEANS TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 1 | 3.2 | | -.37 | -.37 | -.92 | -.90 | | 3.00 | 50.00 |
| C 1 | 1 | 23 | 74.2 | C | .52 | .34 | .69 | .46 | C | 15.52 | 72.52 |
| 2 | 0 | 7 | 22.6 | | -.38 | -.20 | -.53 | -.28 | | 10.14 | 66.71 |
| TOTAL | | 31 | | | | | | | | | |

ITEM NUMBER 8

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | MEANS TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 1 | 3.2 | | -.37 | -.37 | -.92 | -.90 | | 3.00 | 50.00 |
| C 1 | 1 | 24 | 77.4 | C | .73 | .56 | 1.01 | .78 | C | 16.00 | 73.58 |
| 2 | 0 | 6 | 19.4 | | -.60 | -.43 | -.87 | -.62 | | 7.33 | 61.50 |
| TOTAL | | 31 | | | | | | | | | |

ITEM NUMBER 9

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | MEANS TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 1 | 3.2 | | -.37 | -.37 | -.92 | -.90 | | 3.00 | 50.00 |
| C 1 | 1 | 25 | 80.6 | C | .68 | .42 | .97 | .59 | C | 15.68 | 72.56 |
| 2 | 0 | 5 | 16.1 | | -.55 | -.27 | -.83 | -.41 | | 7.20 | 64.20 |
| TOTAL | | 31 | | | | | | | | | |

ITEM NUMBER 10

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | MEANS TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 1 | 3.2 | | -.37 | -.37 | -.92 | -.90 | | 3.00 | 50.00 |
| C 1 | 1 | 24 | 77.4 | C | .61 | .44 | .85 | .61 | C | 15.67 | 72.92 |
| 2 | 0 | 6 | 19.4 | | -.48 | -.30 | -.69 | -.44 | | 8.67 | 64.17 |
| TOTAL | | 31 | | | | | | | | | |

204

985 - 265

32 - 5

74 - 8

61 - 5

72 - 28

324

325

TEST NO 1 ACHIEVEMENT MONITORING AV SUBTEST 6 SUBTRACTION ALGORITHM

ITEM NUMBER 11

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 2 | 6.5 | | -.34 | -.28 | -.66 | -.55 | | 7.00 | 59.50 |
| C 1 | 1 | 24 | 77.4 | C | .63 | .46 | .87 | .64 | C | 15.71 | 73.04 |
| 2 | 0 | 5 | 16.1 | | -.49 | -.34 | -.73 | -.51 | | 8.00 | 62.60 |
| TOTAL | | 31 | | | | | | | | | |

83 - 67

ITEM NUMBER 12

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 2 | 6.5 | | -.34 | -.28 | -.66 | -.55 | | 7.00 | 59.50 |
| C 1 | 1 | 21 | 67.7 | C | .58 | .40 | .76 | .52 | C | 16.05 | 73.29 |
| 2 | 0 | 8 | 25.8 | | -.43 | -.27 | -.59 | -.36 | | 10.00 | 65.87 |
| TOTAL | | 31 | | | | | | | | | |

85 - 59

ITEM NUMBER 13

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| C | 0 | 3 | 9.7 | | -.32 | -.36 | -.56 | -.62 | | 8.67 | 59.33 |
| C 1 | 1 | 17 | 54.8 | C | .71 | .68 | .90 | .86 | C | 17.35 | 76.82 |
| 2 | 0 | 11 | 35.5 | | -.54 | -.49 | -.70 | -.63 | | 10.00 | 63.73 |
| TOTAL | | 31 | | | | | | | | | |

256 - 138

ITEM NUMBER 14

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 2 | 6.9 | | -.34 | -.28 | -.66 | -.55 | | 7.00 | 59.50 |
| C 1 | 1 | 17 | 54.8 | C | .76 | .79 | .96 | 1.00 | C | 17.59 | 77.82 |
| 2 | 0 | 12 | 38.7 | | -.61 | -.67 | -.77 | -.85 | | 9.83 | 61.92 |
| TOTAL | | 31 | | | | | | | | | |

388 - 269

ITEM NUMBER 15

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 3 | 9.7 | | -.32 | -.23 | -.56 | -.40 | | 8.67 | 63.33 |
| C 1 | 1 | 14 | 45.2 | C | .75 | .66 | .94 | .82 | C | 18.29 | 77.86 |
| 2 | 0 | 14 | 45.2 | | -.56 | -.52 | -.70 | -.65 | | 10.64 | 64.64 |
| TOTAL | | 31 | | | | | | | | | |

913 - 408

LERTAP 2.0

TEST NO 1 ACHIEVEMENT MONITORING AV

SUMMARY ITEM STATISTICS

SUBTEST 6 SUBTRACTION ALGORITHM

206

ITEM NUMBER 16

| | OPTION | WT | N | P | |
|---|---|---|---|---|---|
| | 0 | 0 | 3 | 9.7 | |
| C | 1 | 1 | 18 | 58.1 | C |
| | 2 | 0 | 10 | 32.3 | |
| | TOTAL | | 31 | | |

COEFFICIENTS OF CORRELATION

| | PB-ST | PB-TT | B-ST | B-TT | |
|---|---|---|---|---|---|
| | -.30 | -.34 | -.52 | -.58 | |
| C | .73 | .66 | .93 | .83 | C |
| | -.58 | -.48 | -.76 | -.62 | |

MEANS

| ST | TT | |
|---|---|---|
| 9.00 | 60.00 | |
| 17.22 | 76.17 | |
| 9.40 | 63.40 | |

846 − 393

ITEM NUMBER 17

| | OPTION | WT | N | P | |
|---|---|---|---|---|---|
| | 0 | 0 | 5 | 16.1 | |
| C | 1 | 1 | 14 | 45.2 | C |
| | 2 | 0 | 12 | 38.7 | |
| | TOTAL | | 31 | | |

COEFFICIENTS OF CORRELATION

| | PB-ST | PB-TT | B-ST | B-TT | |
|---|---|---|---|---|---|
| | -.29 | -.42 | -.49 | -.63 | |
| C | .66 | .73 | .83 | .92 | C |
| | -.46 | -.43 | -.58 | -.55 | |

MEANS

| ST | TT | |
|---|---|---|
| 10.40 | 60.80 | |
| 17.79 | 78.71 | |
| 10.83 | 64.92 | |

929 − 743

ITEM NUMBER 18

| | OPTION | WT | N | P | |
|---|---|---|---|---|---|
| | 0 | 0 | 6 | 19.4 | |
| C | 1 | 1 | 17 | 54.8 | C |
| | 2 | 0 | 8 | 25.8 | |
| | TOTAL | | 31 | | |

COEFFICIENTS OF CORRELATION

| | PB-ST | PB-TT | B-ST | B-TT | |
|---|---|---|---|---|---|
| | -.30 | -.36 | -.43 | -.52 | |
| C | .76 | .79 | .96 | .99 | C |
| | -.60 | -.57 | -.81 | -.77 | |

MEANS

| ST | TT | |
|---|---|---|
| 10.67 | 63.00 | |
| 17.59 | 77.76 | |
| 8.50 | 60.62 | |

726 − 186

ITEM NUMBER 19

| | OPTION | WT | N | P | |
|---|---|---|---|---|---|
| | 0 | 0 | 9 | 29.0 | |
| C | 1 | 1 | 6 | 19.4 | C |
| | 2 | 0 | 16 | 51.6 | |
| | TOTAL | | 31 | | |

COEFFICIENTS OF CORRELATION

| | PB-ST | PB-TT | B-ST | B-TT | |
|---|---|---|---|---|---|
| | -.48 | -.46 | -.64 | -.60 | |
| C | .51 | .50 | .74 | .72 | C |
| | .03 | .02 | .04 | .03 | |

MEANS

| ST | TT | |
|---|---|---|
| 9.89 | 63.22 | |
| 19.50 | 80.83 | |
| 14.06 | 70.69 | |

623 − 334

ITEM NUMBER 20

| | OPTION | WT | N | P | |
|---|---|---|---|---|---|
| | 0 | 0 | 14 | 45.2 | |
| C | 1 | 1 | 4 | 12.9 | C |
| | 2 | 0 | 13 | 41.9 | |
| | TOTAL | | 31 | | |

COEFFICIENTS OF CORRELATION

| | PB-ST | PB-TT | B-ST | B-TT | |
|---|---|---|---|---|---|
| | -.32 | -.45 | -.41 | -.57 | |
| C | .49 | .44 | .79 | .71 | C |
| | -.01 | .19 | -.01 | .19 | |

MEANS

| ST | TT | |
|---|---|---|
| 12.00 | 65.43 | |
| 20.75 | 82.25 | |
| 13.85 | 72.31 | |

872 − 586

329

TEST NO 1 ACHIEVEMENT MONITORING AV SUBTEST 6 SUBTRACTION ALGORITHM

ITEM NUMBER 21

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEAN | TT MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 15 | 48.4 | | -.26 | -.35 | -.33 | -.44 | | 12.47 | 66.80 |
| C 1 | 1 | 4 | 12.9 | C | .51 | .45 | .82 | .72 | C | 21.00 | 82.50 |
| 2 | 0 | 12 | 38.7 | | -.09 | .05 | -.11 | .06 | | 13.33 | 71.08 |
| TOTAL | | 31 | | | | | | | | | |

436 - 337

ITEM NUMBER 22

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEAN | TT MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 16 | 51.6 | | -.20 | -.31 | -.25 | -.39 | | 12.87 | 67.37 |
| C 1 | 1 | 4 | 12.9 | C | .35 | .32 | .56 | .51 | C | 18.75 | 79.00 |
| 2 | 0 | 11 | 35.5 | | -.04 | .10 | -.05 | .13 | | 13.64 | 71.91 |
| TOTAL | | 31 | | | | | | | | | |

730 - 438

ITEM NUMBER 23

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEAN | TT MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 17 | 54.8 | | -.14 | -.24 | -.17 | -.31 | | 13.24 | 68.24 |
| C 1 | 1 | 1 | 3.2 | C | .35 | .35 | .85 | .85 | C | 24.00 | 90.00 |
| 2 | 0 | 13 | 41.9 | | .02 | .12 | .02 | .15 | | 14.00 | 71.92 |
| TOTAL | | 31 | | | | | | | | | |

504 - 227

ITEM NUMBER 24

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEAN | TT MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 17 | 54.8 | | -.14 | -.24 | -.17 | -.31 | | 13.24 | 68.24 |
| C 1 | 1 | 2 | 6.5 | C | .37 | .43 | .73 | .83 | C | 21.50 | 87.00 |
| 2 | 0 | 12 | 38.7 | | -.05 | .03 | -.06 | .04 | | 13.58 | 70.92 |
| TOTAL | | 31 | | | | | | | | | |

600 - 481

207

TEST NO 1 ACHIEVEMENT MONITORING SUBTEST 1 OBJECTIVES TEST

208

ITEM NUMBER 1

| | OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEAN | TT MEAN | ITEM DESCRIPTIONS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| | 2 | 0 | 2 | 6.5 | | -.07 | .12 | -.14 | .24 | | 11.50 | 77.00 | Numerousness |
| C | 3 | 1 | 29 | 93.5 | C | .07 | -.12 | .13 | -.22 | C | 12.00 | 72.62 | Writes 0-99 |
| | 4 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| | TOTAL | | 31 | | | | | | | | | | |

ITEM NUMBER 2

| | OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEAN | TT MEAN | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| C | 1 | 1 | 30 | 96.8 | C | .43 | .29 | .83 | .56 | C | 12.10 | 73.37 | |
| | 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | Numerousness |
| | 3 | 0 | 1 | 3.2 | | -.43 | -.29 | -1.05 | -.71 | | 8.00 | 59.00 | Represents 0-99 |
| | 4 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| | TOTAL | | 31 | | | | | | | | | | |

ITEM NUMBER 3

| | OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEAN | TT MEAN | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| | 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| C | 3 | 1 | 31 | 100.0 | C | .00 | .00 | .00 | .00 | C | 11.97 | 72.90 | Problem Solving (A) |
| | 4 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | Add-part part whole 11-15 |
| | TOTAL | | 31 | | | | | | | | | | |

ITEM NUMBER 4

| | OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEAN | TT MEAN | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 0 | 6 | 19.4 | | -.71 | -.37 | -1.03 | -.83 | | 9.50 | 66.33 | |
| C | 2 | 1 | 24 | 77.4 | C | .72 | .43 | .99 | .69 | C | 12.62 | 74.92 | Problem Solving (A) |
| | 3 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | Subt-simple separating 0-99 |
| | 4 | 0 | 1 | 3.2 | | -.10 | -.19 | -.26 | -.46 | | 11.00 | 64.00 | |
| | TOTAL | | 31 | | | | | | | | | | |

ITEM NUMBER 25

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEANS | TT MEANS | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 1 | 3.2 | | -.10 | .17 | -.26 | .42 | | 11.00 | 81.00 | |
| 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | Problem Solving (B) |
| C 3 | 1 | 30 | 96.8 | C | .10 | -.17 | .20 | -.33 | C | 12.00 | 72.63 | Add-simple joining 11-15 |
| 4 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| TOTAL | | 31 | | | | | | | | | | |

ITEM NUMBER 26

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEANS | TT MEANS | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| C 1 | 1 | 23 | 74.2 | C | .51 | .54 | .69 | .73 | C | 12.48 | 75.70 | |
| 2 | 0 | 3 | 9.7 | | .01 | -.17 | .01 | -.30 | | 12.00 | 68.33 | Problem Solving (B) |
| 3 | 0 | 2 | 6.5 | | -.54 | -.46 | -1.05 | -.88 | | 8.50 | 58.00 | Subt-part part whole-addend |
| 4 | 0 | 3 | 9.7 | | -.32 | -.26 | -.55 | -.45 | | 10.33 | 66.00 | 0-99 |
| TOTAL | | 31 | | | | | | | | | | |

LERTAP 2.0 SUMMARY ITEM STATISTICS PAGE 17

TEST NO 1 ACHIEVEMENT MONITORING 10 SUBTEST 1 OBJECTIVES TEST

ITEM NUMBER 27

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEANS | TT MEANS | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| C 1 | 1 | 31 | 100.0 | C | .00 | .00 | .00 | .00 | C | 11.97 | 72.90 | |
| 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | Order, Place Value |
| 3 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | Ordering 0-99 |
| 4 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| TOTAL | | 31 | | | | | | | | | | |

ITEM NUMBER 28

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEANS | TT MEANS | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 4 | 12.9 | | -.05 | .00 | -.08 | .01 | | 11.75 | 73.00 | |
| 2 | 0 | 14 | 45.2 | | -.40 | -.22 | -.51 | -.28 | | 11.21 | 70.79 | Order, Place Value |
| C 3 | 1 | 10 | 32.3 | C | .46 | .20 | .60 | .26 | C | 13.10 | 75.40 | Place Value 0-99 |
| 4 | 0 | 3 | 9.7 | | .01 | .05 | .01 | .09 | | 12.00 | 74.33 | |
| TOTAL | | 31 | | | | | | | | | | |

ITEM NUMBER 9

| | OPTION | WT | N | P | |
|---|---|---|---|---|---|
| | 1 | 0 | 4 | 12.9 | |
| C | 2 | 1 | 26 | 83.9 | C |
| | 3 | 0 | 1 | 3.2 | |
| | 4 | 0 | 0 | .0 | |
| | TOTAL | | 31 | | |

| PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | MEANS TT | |
|---|---|---|---|---|---|---|---|
| -.67 | -.38 | -1.07 | -.56 | | 9.00 | 65.00 | Sentence Writing (A) |
| .61 | .36 | .90 | .53 | C | 12.42 | 74.27 | Subt-comparison 11-15 |
| .00 | -.08 | .01 | -.20 | | 12.00 | 69.00 | |
| .00 | .00 | .00 | .00 | | .00 | .00 | |

ITEM NUMBER 10

| | OPTION | WT | N | P | |
|---|---|---|---|---|---|
| | 1 | 0 | 0 | .0 | |
| | 2 | 0 | 0 | .0 | |
| C | 3 | 1 | 31 | 100.0 | C |
| | 4 | 0 | 0 | .0 | |
| | TOTAL | | 31 | | |

| PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | MEANS TT | |
|---|---|---|---|---|---|---|---|
| .00 | .00 | .00 | .00 | | .00 | .00 | |
| .00 | .00 | .00 | .00 | | .00 | .00 | Sentence Writing (A) |
| .00 | .00 | .00 | .00 | C | 11.97 | 72.90 | Aud-part part whole 0-99 |
| .00 | .00 | .00 | .00 | | .00 | .00 | |



LERTAP 2.0

TEST NO 1 ACHIEVEMENT MONITORING



SUMMARY ITEM STATISTICS

SUBTEST 1 OBJECTIVES TEST

ITEM NUMBER 11

| | OPTION | WT | N | P | |
|---|---|---|---|---|---|
| | 1 | 0 | 0 | .0 | |
| | 2 | 0 | 2 | 6.5 | |
| C | 3 | 1 | 29 | 93.5 | C |
| | 4 | 0 | 0 | .0 | |
| | TOTAL | | 31 | | |

| PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | MEANS TT | |
|---|---|---|---|---|---|---|---|
| .00 | .00 | .00 | .00 | | .00 | .00 | |
| -.38 | .15 | -.75 | .30 | | 9.50 | 78.00 | Sentence Writing (B) |
| .38 | -.15 | .67 | -.27 | C | 12.14 | 72.55 | Add-simple joining 11-15 |
| .00 | .00 | .00 | .00 | | .00 | .00 | |

ITEM NUMBER 12

| | OPTION | WT | N | P | |
|---|---|---|---|---|---|
| | 1 | 0 | 2 | 6.5 | |
| C | 2 | 1 | 21 | 67.7 | C |
| | 3 | 0 | 7 | 22.6 | |
| | 4 | 0 | 1 | 3.2 | |
| | TOTAL | | 31 | | |

| PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | MEANS TT | |
|---|---|---|---|---|---|---|---|
| -.07 | .06 | -.14 | .12 | | 11.50 | 75.00 | |
| .64 | .42 | .83 | .55 | C | 12.71 | 75.43 | Sentence Writing (B) |
| -.63 | -.50 | -.87 | -.69 | | 10.00 | 64.86 | Subt-join-addend 0-99 |
| -.10 | -.02 | -.26 | -.05 | | 11.00 | 72.00 | |

TEST NO 1 ACHIEVEMENT MONITORING AW SUBTEST 1 OBJECTIVES TEST

ITEM NUMBER 13

| | OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| C | 2 | 1 | 31 | 100.0 | C | .00 | .00 | .00 | .00 | C | 11.97 | 72.90 | Algorithms |
| | 3 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | Addition Algorithm |
| | 4 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| | TOTAL | | 31 | | | | | | | | | | |

ITEM NUMBER 14

| | OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| C | 1 | 1 | 25 | 80.6 | C | .57 | .47 | .81 | .67 | C | 12.44 | 74.92 | |
| | 2 | 0 | 3 | 9.7 | | -.32 | -.36 | -.55 | -.62 | | 10.33 | 63.33 | Algorithms |
| | 3 | 0 | 2 | 6.5 | | -.54 | -.21 | -1.05 | -.41 | | 8.50 | 66.00 | Subtraction Algorithm |
| | 4 | 0 | 1 | 3.2 | | .00 | -.17 | .01 | -.41 | | 12.00 | 65.00 | |
| | TOTAL | | 31 | | | | | | | | | | |

LERTAP 2.0 SUMMARY ITEM STATISTICS

TEST NO 1 ACHIEVEMENT MONITORING AW SUBTEST 2 SENTENCE WRITING - FREE RESPONSE

ITEM NUMBER 1

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | MEANS TT | ITEM DESCRIPTIONS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| C 1 | 1 | 31 | 100.0 | C | .00 | .00 | .00 | .00 | C | 3.65 | 72.90 | Sentence Writing |
| 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | Subt-simple separating 11-15. |
| TOTAL | | 31 | | | | | | | | | | |

ITEM NUMBER 2

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | MEANS TT | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 1 | 3.2 | | -.20 | -.21 | -.48 | -.51 | | 3.00 | 63.00 | |
| C 1 | 1 | 24 | 77.4 | C | .84 | .48 | 1.16 | .66 | C | 3.92 | 75.17 | Sentence Writing |
| 2 | 0 | 6 | 19.4 | | -.80 | -.42 | -1.15 | -.60 | | 2.67 | 65.50 | Subt-comparison 0-99 |
| TOTAL | | 31 | | | | | | | | | | |

ITEM NUMBER 3

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | MEANS TT | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| C 1 | 1 | 30 | 96.8 | C | .20 | .10 | .38 | .20 | C | 3.67 | 73.07 | Sentence Writing |
| 2 | 0 | 1 | 3.2 | | -.20 | -.10 | -.48 | -.25 | | 3.00 | 68.00 | Add-simple joining 0-99 |
| TOTAL | | 31 | | | | | | | | | | |

ITEM NUMBER 4

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | MEANS TT | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 1 | 3.2 | | -.20 | -.17 | -.48 | -.41 | | 3.00 | 65.00 | Sentence Writing |
| C 1 | 1 | 28 | 90.3 | C | .72 | .30 | 1.17 | .49 | C | 3.79 | 73.75 | Subt-part part whole-addend |
| 2 | 0 | 2 | 6.5 | | -.72 | -.24 | -1.41 | -.46 | | 2.00 | 65.00 | 11-15 |
| TOTAL | | 31 | | | | | | | | | | |

TEST NO 1 ACHIEVEMENT MONITORING AW SUBTEST 3 ADDITION FACTS

ITEM NUMBER 1

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | MEANS TT | ITEM DESCRIPTIONS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 1 | 3.2 | | -.49 | -.19 | -1.21 | -.46 | | 9.00 | 64.00 | |
| C 1 | 1 | 30 | 96.8 | C | .49 | .19 | .95 | .36 | C | 11.63 | 73.20 | 2 + 4 |
| 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| TOTAL | | 31 | | | | | | | | | | |

ITEM NUMBER 2

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | MEANS TT | ITEM DESCRIPTIONS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| C 1 | 1 | 30 | 96.8 | C | .69 | .08 | 1.33 | .16 | C | 11.67 | 73.03 | 6 + 3 |
| 2 | 0 | 1 | 3.2 | | -.69 | -.08 | -1.68 | -.20 | | 3.00 | 69.00 | |
| TOTAL | | 31 | | | | | | | | | | |

ITEM NUMBER 3

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | MEANS TT | ITEM DESCRIPTIONS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| C 1 | 1 | 31 | 100.0 | C | .00 | .00 | .00 | .00 | | 11.55 | 72.90 | 5 + 2 |
| 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| TOTAL | | 31 | | | | | | | | | | |

ITEM NUMBER 4

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | MEANS TT | ITEM DESCRIPTIONS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| C 1 | 1 | 31 | 100.0 | C | .00 | .00 | .00 | .00 | C | 11.55 | 72.90 | 2 + 3 |
| 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| TOTAL | | 31 | | | | | | | | | | |

ITEM NUMBER 5

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | MEANS TT | ITEM DESCRIPTIONS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| C 1 | 1 | 31 | 100.0 | C | .00 | .00 | .00 | .00 | C | 11.55 | 72.90 | 5 + 0 |
| 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| TOTAL | | 31 | | | | | | | | | | |

TEST NO 1 ACHIEVEMENT MONITORING AM  SUBTEST 3 ADDITION FACTS



ITEM NUMBER 6

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEAN | TT MEAN | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| C 1 | 1 | 31 | 100.0 | C | .00 | .00 | .00 | .00 | C | 11.55 | T2.90 | 1 + 3 |
| 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| TOTAL | | 31 | | | | | | | | | | |

ITEM NUMBER 7

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEAN | TT MEAN | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| C 1 | 1 | 30 | 96.8 | C | .11 | .02 | .20 | .04 | C | 11.57 | T2.93 | 9 + 2 |
| 2 | 0 | 1 | 3.2 | | -.11 | -.02 | -.20 | -.05 | | 11.00 | T2.00 | |
| TOTAL | | 31 | | | | | | | | | | |

ITEM NUMBER 8

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEAN | TT MEAN | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| C 1 | 1 | 31 | 100.0 | C | .00 | .00 | .00 | .00 | C | 11.55 | T2.90 | 6 + 6 |
| 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| TOTAL | | 31 | | | | | | | | | | |

ITEM NUMBER 9

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEAN | TT MEAN | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 2 | 6.5 | | -.71 | -.16 | -1.38 | -.32 | | 9.00 | 67.50 | |
| C 1 | 1 | 29 | 93.5 | C | .71 | .16 | 1.25 | .29 | C | 11.72 | T3.28 | 4 + 7 |
| 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| TOTAL | | 31 | | | | | | | | | | |

ITEM NUMBER 10

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEAN | TT MEAN | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 2 | 6.5 | | -.85 | -.19 | -1.65 | -.38 | | 8.50 | 66.50 | |
| C 1 | 1 | 29 | 93.5 | C | .85 | .19 | 1.49 | .34 | C | 11.76 | T3.34 | 7 + 6 |
| 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| TOTAL | | 31 | | | | | | | | | | |

TEST NO 1 ACHIEVEMENT MONITORING AW SUBTEST 3 ADDITION FACTS

ITEM NUMBER 11

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | MEANS TT | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 5 | 16.1 | | -.81 | -.41 | -1.22 | -.61 | | 9.80 | 64.80 | |
| C 1 | 1 | 24 | 77.4 | C | .80 | .41 | 1.11 | .57 | C | 11.96 | 74.83 | 9 + 7 |
| 2 | 0 | 2 | 6.5 | | -.15 | -.09 | -.30 | -.17 | | 11.00 | 70.00 | |
| TOTAL | | 31 | | | | | | | | | | |

ITEM NUMBER 12

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | MEANS TT | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| C 1 | 1 | 31 | 100.0 | C | .00 | .00 | .00 | .00 | C | 11.55 | 72.90 | 6 + 4 |
| 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| TOTAL | | 31 | | | | | | | | | | |

ITEM NUMBER 1

| | OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | MEANS TT | ITEM DESCRIPTIONS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| C | 1 | 1 | 31 | 100.0 | C | .00 | .00 | .00 | .00 | C | 10.65 | T2.90 | 3 - 2 |
| | 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| | TOTAL | | 31 | | | | | | | | | | |

ITEM NUMBER 2

| | OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | MEANS TT | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| C | 1 | 1 | 31 | 100.0 | C | .00 | .00 | .00 | .00 | C | 10.65 | T2.90 | 6 - 4 |
| | 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| | TOTAL | | 31 | | | | | | | | | | |

ITEM NUMBER 3

| | OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | MEANS TT | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 0 | 1 | 3.2 | | -.31 | -.17 | -.75 | -.41 | | 8.00 | 65.00 | |
| C | 1 | 1 | 30 | 96.8 | C | .31 | .17 | .69 | .32 | C | 10.73 | 73.17 | 9 - 1 |
| | 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | - .00 | |
| | TOTAL | | 31 | | | | | | | | | | |

ITEM NUMBER 4

| | OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | MEANS TT | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 0 | 2 | 6.5 | | -.44 | -.37 | -.86 | -.73 | | 8.00 | 60.50 | |
| C | 1 | 1 | 29 | 93.5 | C | .44 | .37 | .78 | .66 | C | 10.83 | 73.76 | 7 - 3 |
| | 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| | TOTAL | | 31 | | | | | | | | | | |

ITEM NUMBER 5

| | OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | MEANS TT | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| C | 1 | 1 | 31 | 100.0 | C | .00 | .00 | .00 | .00 | C | 10.65 | 72.90 | 6 - 1 |
| | 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 | |
| | TOTAL | | 31 | | | | | | | | | | |

TEST NO 1 ACHIEVEMENT MONITORING AW SUBTEST 4 SUBTRACTION FACTS

ITEM NUMBER 6

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEAN | TT MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| C 1 | 1 | 30 | 96.8 | C | .31 | .21 | .59 | .40 | C | 10.73 | 73.23 |
| 2 | 0 | 1 | 3.2 | | -.31 | -.21 | -.75 | -.51 | | 8.00 | 63.00 |
| TOTAL | | 31 | | | | | | | | | |

7 - 5

ITEM NUMBER 7

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEAN | TT MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 2 | 6.5 | | -.61 | -.21 | -1.19 | -.41 | | 7.00 | 66.00 |
| C 1 | 1 | 29 | 93.5 | C | .61 | .21 | 1.07 | .37 | C | 10.90 | 73.38 |
| 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| TOTAL | | 31 | | | | | | | | | |

10 - 4

ITEM NUMBER 8

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEAN | TT MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 2 | 6.5 | | -.44 | -.19 | -.86 | -.38 | | 8.00 | 66.50 |
| C 1 | 1 | 26 | 83.9 | C | .40 | .30 | .59 | .44 | C | 10.92 | 74.04 |
| 2 | 0 | 3 | 9.7 | | -.13 | -.21 | -.23 | -.36 | | 10.00 | 67.33 |
| TOTAL | | 31 | | | | | | | | | |

13 - 9

ITEM NUMBER 9

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEAN | TT MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 5 | 16.1 | | -.51 | -.10 | -.77 | -.14 | | 8.80 | 71.00 |
| C 1 | 1 | 25 | 80.6 | C | .51 | .01 | .73 | .02 | C | 11.04 | 72.96 |
| 2 | 0 | 1 | 3.2 | | -.07 | .17 | -.16 | .42 | | 10.00 | 81.00 |
| TOTAL | | 31 | | | | | | | | | |

14 - 8

ITEM NUMBER 10

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEAN | TT MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 5 | 16.1 | | -.74 | -.37 | -1.11 | -.55 | | 8.00 | 65.60 |
| C 1 | 1 | 22 | 71.0 | C | .67 | .39 | .88 | .52 | C | 11.32 | 75.09 |
| 2 | 0 | 4 | 12.9 | | -.10 | -.13 | -.15 | -.20 | | 10.25 | 70.00 |
| TOTAL | | 31 | | | | | | | | | |

11 - 7

TEST NO 1 ACHIEVEMENT MONITORING AW SUBTEST 4 SUBTRACTION FACTS

ITEM NUMBER 11

| OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 6 | 19.4 | | -.72 | -.41 | -1.03 | -.59 | | 8.33 | 65.67 | |
| C 1 | 1 | 23 | 74.2 | C | .71 | .46 | .96 | .62 | C | 11.30 | 75.26 | 12 - 4 |
| 2 | 0 | 2 | 6.5 | | -.11 | -.16 | -.21 | -.32 | | 10.00 | 67.50 | |
| TOTAL | | 31 | | | | | | | | | | |

ITEM NUMBER 12

| OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 5 | 16.1 | | -.40 | -.37 | -.60 | -.55 | | 9.20 | 65.60 | |
| C 1 | 1 | 23 | 74.2 | C | .57 | .40 | .77 | .54 | C | 11.17 | 74.96 | 17 - 9 |
| 2 | 0 | 3 | 9.7 | | -.34 | -.13 | -.59 | -.23 | | 9.00 | 69.33 | |
| TOTAL | | 31 | | | | | | | | | | |



ERIC

ITEM NUMBER 1

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | MEANS TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| C 1 | 1 | 29 | 93.5 | C | .17 | -.02 | .29 | -.03 | C | 20.76 | 72.86 |
| 2 | 0 | 2 | 6.5 | | -.17 | .02 | -.32 | .04 | | 19.00 | 73.50 |
| TOTAL | | 31 | | | | | | | | | |

ITEM DESCRIPTIONS: 51 + 27

ITEM NUMBER 2

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | MEANS TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| C 1 | 1 | 31 | 100.0 | C | .00 | .00 | .00 | .00 | C | 20.65 | 72.90 |
| 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| TOTAL | | 31 | | | | | | | | | |

ITEM DESCRIPTIONS: 40 + 48

ITEM NUMBER 3

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | MEANS TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| C 1 | 1 | 30 | 96.8 | C | .12 | .10 | .22 | .20 | C | 20.70 | 73.07 |
| 2 | 0 | 1 | 3.2 | | -.12 | -.10 | -.28 | -.25 | | 19.00 | 68.00 |
| TOTAL | | 31 | | | | | | | | | |

ITEM DESCRIPTIONS: 25 + 22

ITEM NUMBER 4

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | MEANS TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| C 1 | 1 | 31 | 100.0 | C | .00 | .00 | .00 | .00 | C | 20.65 | 72.90 |
| 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| TOTAL | | 31 | | | | | | | | | |

ITEM DESCRIPTIONS: 362 + 205

ITEM NUMBER 5

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | MEANS TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| C 1 | 1 | 31 | 100.0 | C | .00 | .00 | .00 | .00 | C | 20.65 | 72.90 |
| 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| TOTAL | | 31 | | | | | | | | | |

ITEM DESCRIPTIONS: 447 + 212

TEST NO 1 ACHIEVEMENT MONITORING AW SUBTEST 5 ADDITION ALGORITHM

ITEM NUMBER 6

| OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 1 | 3.2 | | -.32 | -.21 | -.80 | -.51 | | 16.00 | 63.00 |
| C 1 | 1 | 30 | 96.8 | C | .32 | .21 | .63 | .40 | C | 20.80 | 73.23 |
| 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| TOTAL | | 31 | | | | | | | | | |

683 + 215

ITEM NUMBER 7

| OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| C 1 | 1 | 31 | 100.0 | C | .00 | .00 | .00 | .00 | C | 20.65 | 72.90 |
| 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| TOTAL | | 31 | | | | | | | | | |

64 + 7

ITEM NUMBER 8

| OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| C 1 | 1 | 29 | 93.5 | C | .12 | .16 | .20 | .29 | C | 20.72 | 73.28 |
| 2 | 0 | 2 | 6.5 | | -.12 | -.16 | -.22 | -.32 | | 19.50 | 67.50 |
| TOTAL | | 31 | | | | | | | | | |

6 + 84

ITEM NUMBER 9

| OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| C 1 | 1 | 29 | 93.5 | C | -.09 | -.00 | -.15 | -.01 | C | 20.59 | 72.90 |
| 2 | 0 | 2 | 6.5 | | .09 | .00 | .17 | .01 | | 21.50 | 73.00 |
| TOTAL | | 31 | | | | | | | | | |

7 + 59

ITEM NUMBER 10

| OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| C 1 | 1 | 30 | 96.8 | C | .32 | .21 | .63 | .40 | C | 20.80 | 73.23 |
| 2 | 0 | 1 | 3.2 | | -.32 | -.21 | -.80 | -.51 | | 16.00 | 63.00 |
| TOTAL | | 31 | | | | | | | | | |

19 + 44

356

357

220

TEST NO 1 ACHIEVEMENT MONITORING AW SUBTEST 5 ADDITION ALGORITHM

ITEM NUMBER 11

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEAN | TT MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| C 1 | 1 | 29 | 93.5 | C | .06 | -.00 | .11 | -.01 | C | 20.69 | T2.90 |
| 2 | 0 | 2 | 6.5 | | -.06 | .00 | -.13 | .01 | | 20.00 | T3.00 |
| TOTAL | | 31 | | | | | | | | | |

56
+ 34

ITEM NUMBER 12

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEAN | TT MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| C 1 | 1 | 25 | 80.6 | C | .31 | -.01 | .44 | -.02 | C | 21.04 | 72.84 |
| 2 | 0 | 6 | 19.4 | | -.31 | .01 | -.44 | .02 | | 19.00 | T3.1T |
| TOTAL | | 31 | | | | | | | | | |

59
+ 65

ITEM NUMBER 13

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEAN | TT MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 1 | 3.2 | | -.45 | -.33 | -1.14 | -.82 | | 14.00 | 5T.00 |
| C 1 | 1 | 30 | 96.8 | C | .46 | .33 | .90 | .65 | C | 20.8T | T3.43 |
| 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| TOTAL | | 31 | | | | | | | | | |

104
+ 839

ITEM NUMBER 14

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEAN | TT MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 1 | 3.2 | | -.46 | -.33 | -1.14 | -.82 | | 14.00 | 5T.00 |
| C 1 | 1 | 28 | 90.3 | C | .42 | .28 | .68 | .47 | C | 21.00 | 7? ?1 |
| 2 | 0 | 2 | 6.5 | | -.17 | -.10 | -.32 | -.20 | | 19.00 | 69.50 |
| TOTAL | | 31 | | | | | | | | | |

559
+ 236

ITEM NUMBER 15

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEAN | TT MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 2 | 6.5 | | -.5T | -.39 | -1.11 | -.T6 | | 15.00 | 60.00 |
| C 1 | 1 | 25 | 80.6 | C | .53 | .43 | .71 | .61 | C | 21.28 | T4.72 |
| 2 | 0 | 4 | 12.9 | | -.17 | -.22 | -.27 | -.35 | | 19.50 | 68.00 |
| TOTAL | | 31 | | | | | | | | | |

328
+ 349

TEST NO 1 ACHIEVEMENT MONITORING AM SUBTEST 6 ADDITION ALGORITHM

222

ITEM NUMBER 16

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEAN | TT MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 2 | 6.5 | | -.57 | -.39 | -1.11 | -.76 | | 15.00 | 60.00 |
| C 1 | 1 | 28 | 90.3 | C | .46 | .45 | .75 | .73 | C | 21.04 | 74.18 |
| 2 | 0 | 1 | 3.2 | | .02 | -.21 | .06 | -.61 | | 21.00 | 63.00 |
| TOTAL | | 31 | | | | | | | | | |

431 + 272

ITEM NUMBER 17

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEAN | TT MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 2 | 6.5 | | -.57 | -.39 | -1.11 | -.76 | | 15.00 | 60.00 |
| C 1 | 1 | 26 | 83.9 | C | .48 | .30 | .71 | .44 | C | 21.19 | 74.04 |
| 2 | 0 | 3 | 9.7 | | -.12 | -.05 | -.21 | -.08 | | 19.67 | 71.67 |
| TOTAL | | 31 | | | | | | | | | |

594 + 383

ITEM NUMBER 18

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEAN | TT MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 2 | 6.5 | | -.57 | -.39 | -1.11 | -.7 | | 15.00 | 60.00 |
| C 1 | 1 | 25 | 83.9 | C | .48 | .28 | .71 | .41 | C | 21.19 | 73.96 |
| 2 | 0 | 3 | 9.7 | | -.12 | -.02 | -.21 | -.04 | | 19.67 | 72.33 |
| TOTAL | | 31 | | | | | | | | | |

482 + 436

ITEM NUMBER 19

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEAN | TT MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 1 | 3.2 | | -.46 | -.33 | -1.14 | -.82 | | 14.00 | 57.00 |
| C 1 | 1 | 25 | 80.6 | C | .53 | .23 | .75 | .33 | C | 21.32 | 73.08 |
| 2 | 0 | 5 | 16.1 | | -.34 | -.09 | -.52 | -.13 | | 18.60 | 71.20 |
| TOTAL | | 31 | | | | | | | | | |

347 + 589

ITEM NUMBER 20

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST MEAN | TT MEAN |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 2 | 6.5 | | -.47 | -.36 | -.91 | -.70 | | 16.00 | 61.00 |
| C 1 | 1 | 23 | 74.2 | C | .57 | .44 | .77 | .60 | C | 21.52 | 75.17 |
| 2 | 0 | 6 | 19.4 | | -.34 | -.27 | -.49 | -.38 | | 18.83 | 68.17 |
| TOTAL | | 31 | | | | | | | | | |

188 + 295

361

360

TEST NO 1 ACHIEVEMENT MONITORING 10TH SUBTEST 5 ADDITION ALGORITHM

ITEM NUMBER 21

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 2 | 6.5 | | -.47 | -.36 | -.91 | -.70 | | 16.00 | 61.00 |
| C 1 | 1 | 24 | 77.4 | C | .58 | .30 | .60 | .41 | C | 21.46 | 74.29 |
| 2 | 0 | 5 | 16.1 | | -.34 | -.10 | -.52 | -.14 | | 18.60 | 71.00 |
| TOTAL | | 31 | | | | | | | | | |

ITEM NUMBER 22

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 4 | 12.9 | | -.46 | -.37 | -.74 | -.59 | | 17.50 | 64.50 |
| C 1 | 1 | 17 | 54.8 | C | .60 | .39 | .76 | .49 | C | 22.06 | 76.00 |
| 2 | 0 | 10 | 32.3 | | -.30 | -.15 | -.39 | -.20 | | 19.50 | 71.00 |
| TOTAL | | 31 | | | | | | | | | |

ITEM NUMBER 23

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 4 | 12.9 | | -.32 | -.24 | -.50 | -.38 | | 18.50 | 67.50 |
| C 1 | 1 | 16 | 51.6 | C | .34 | .12 | .42 | .15 | C | 21.50 | 73.94 |
| 2 | 0 | 11 | 35.5 | | -.13 | .04 | -.17 | .05 | | 20.18 | 73.36 |
| TOTAL | | 31 | | | | | | | | | |

ITEM NUMBER 24

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 6 | 19.4 | | -.21 | -.23 | -.31 | -.33 | | 19.50 | 68.83 |
| C 1 | 1 | 17 | 54.8 | C | .47 | .32 | .59 | .41 | C | 21.76 | 75.47 |
| 2 | 0 | 8 | 25.8 | | -.34 | -.14 | -.47 | -.22 | | 19.12 | 70.50 |
| TOTAL | | 31 | | | | | | | | | |

996
+ 317

69
34
+ 57

86
54
+ 46

95
99
+ 78

223

LERTAP 2.0

TEST 0 1 ACHIEVEMENT MONITORING AW

SUMMARY ITEM STATISTICS

SUBTEST 6 SUBTRACTION ALGORITHM

ITEM DESCRIPTIONS

224

ITEM NUMBER 1

| | OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| C | 1 | 1 | 30 | 96.8 | C | .30 | .21 | .59 | .40 | C | 14.73 | T3.23 |
| | 2 | 0 | 1 | 3.2 | | -.30 | -.21 | -.74 | -.51 | | 6.00 | 63.00 |
| | TOTAL | | 31 | | | | | | | | | |

94
-60

ITEM NUMBER 2

| | OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| C | 1 | 1 | 31 | 100.0 | C | .00 | .00 | .00 | .00 | C | 14.45 | T2.90 |
| | 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| | TOTAL | | 31 | | | | | | | | | |

78
-64

ITEM NUMBER 3

| | OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| C | 1 | 1 | 31 | 100.0 | C | .00 | .00 | .00 | .00 | C | 14.45 | T2.90 |
| | 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| | TOTAL | | 31 | | | | | | | | | |

48
-21

ITEM NUMBER 4

| | OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| C | 1 | 1 | 31 | 100.0 | C | .00 | .00 | .00 | .00 | C | 14.45 | T2.90 |
| | 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| | TOTAL | | 31 | | | | | | | | | |

634
-523

ITEM NUMBER 5

| | OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| C | 1 | 1 | 31 | 100.0 | C | .00 | .00 | .00 | .00 | C | 14.45 | 72.90 |
| | 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| | TOTAL | | 31 | | | | | | | | | |

582
-232

TEST NO 1 ACHIEVEMENT MONITORING 10 AW SUBTEST 6 SUBTRACTION ALGORITHM

ITEM NUMBER 6

| OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| C 1 | 1 | 31 | 100.0 | C | .00 | .00 | .00 | .00 | C | 14.45 | 72.90 |
| 2 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| TOTAL | | 31 | | | | | | | | | |

998 − 676

ITEM NUMBER 7

| OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| C 1 | 1 | 25 | 80.6 | C | .64 | .48 | .90 | .69 | C | 16.04 | 74.96 |
| 2 | 0 | 6 | 19.4 | | -.64 | -.48 | -.92 | -.69 | | 7.83 | 64.33 |
| TOTAL | | 31 | | | | | | | | | |

63 − 4

ITEM NUMBER 8

| OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| C 1 | 1 | 26 | 83.9 | C | .62 | .52 | .92 | .77 | C | 15.85 | 74.88 |
| 2 | 0 | 5 | 16.1 | | -.62 | -.52 | -.94 | -.78 | | 7.20 | 62.60 |
| TOTAL | | 31 | | | | | | | | | |

95 − 7

ITEM NUMBER 9

| OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | .0 | | .00 | .00 | .00 | .00 | | .00 | .00 |
| C 1 | 1 | 24 | 77.4 | C | .40 | .30 | .55 | .42 | C | 15.54 | 74.33 |
| 2 | 0 | 7 | 22.6 | | -.40 | -.30 | -.55 | -.42 | | 10.71 | 68.00 |
| TOTAL | | 31 | | | | | | | | | |

77 − 8

ITEM NUMBER 10

| OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 1 | 3.2 | | -.30 | -.21 | -.74 | -.51 | | 6.00 | 63.00 |
| C 1 | 1 | 27 | 87.1 | C | .54 | .44 | .84 | .68 | C | 15.52 | 74.37 |
| 2 | 0 | 3 | 9.7 | | -.44 | -.37 | -.78 | -.64 | | 7.67 | 63.00 |
| TOTAL | | 31 | | | | | | | | | |

31 − 15

225

TEST NO 1 ACHIEVEMENT MONITORING SUBTEST 6 SUBTRACTION ALGORITHM

ITEM NUMBER 11

| OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 2 | 6.5 | | -.36 | -.30 | -.70 | -.58 | | 7.50 | 63.00 |
| C 1 | 1 | 24 | 77.4 | C | .59 | .51 | .82 | .70 | C | 16.08 | 75.29 |
| 2 | 0 | 5 | 16.1 | | -.43 | -.38 | -.65 | -.57 | | 9.40 | 65.40 |
| TOTAL | | 31 | | | | | | | | | |

77 − 29

ITEM NUMBER 12

| OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 3 | 9.7 | | -.39 | -.45 | -.68 | -.77 | | 8.33 | 61.00 |
| C 1 | 1 | 21 | 67.7 | C | .56 | .52 | .75 | .68 | C | 16.48 | 76.05 |
| 2 | 0 | 7 | 22.6 | | -.37 | -.27 | -.51 | -.37 | | 11.00 | 68.57 |
| TOTAL | | 31 | | | | | | | | | |

72 − 63

ITEM NUMBER 13

| OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 5 | 16.1 | | -.35 | -.45 | -.52 | -.67 | | 10.40 | 64.00 |
| C 1 | 1 | 14 | 45.2 | C | .86 | .76 | 1.08 | .96 | C | 19.29 | 80.21 |
| 2 | 0 | 12 | 38.7 | | -.62 | -.44 | -.78 | -.56 | | 10.50 | 68.08 |
| TOTAL | | 31 | | | | | | | | | |

453 − 215

ITEM NUMBER 14

| OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 5 | 16.1 | | -.35 | -.45 | -.52 | -.67 | | 10.40 | 64.00 |
| C 1 | 1 | 13 | 41.9 | C | .81 | .62 | 1.02 | 1.04 | C | 19.31 | 81.31 |
| 2 | 0 | 13 | 41.9 | | -.55 | -.49 | -.69 | -.61 | | 11.15 | 67.92 |
| TOTAL | | 31 | | | | | | | | | |

950 − 219

ITEM NUMBER 15

| OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 5 | 16.1 | | -.35 | -.45 | -.52 | -.67 | | 10.40 | 64.00 |
| C 1 | 1 | 14 | 45.2 | C | .86 | .76 | 1.08 | .96 | C | 19.29 | 80.21 |
| 2 | 0 | 12 | 38.7 | | -.62 | -.44 | -.78 | -.56 | | 10.50 | 68.08 |
| TOTAL | | 31 | | | | | | | | | |

994 − 336

363

360

226

TEST NO 1 ACHIEVEMENT MONITORING AM SUBTEST 6 SUBTRACTION ALGORITHM

ITEM NUMBER 16

| OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 6 | 19.4 | | -.52 | -.59 | -.75 | -.86 | | 9.00 | 62.33 |
| C 1 | 1 | 16 | 51.6 | C | .82 | .76 | 1.03 | .95 | C | 18.50 | 79.31 |
| 2 | 0 | 9 | 29.0 | | -.45 | -.32 | -.59 | -.42 | | 10.89 | 68.56 |
| TOTAL | | 31 | | | | | | | | | |

746 − 584

ITEM NUMBER 17

| OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 4 | 12.9 | | -.35 | -.47 | -.57 | -.75 | | 9.75 | 62.25 |
| C 1 | 1 | 18 | 58.1 | C | .73 | .69 | .92 | .87 | C | 17.61 | 78.00 |
| 2 | 0 | 9 | 29.0 | | -.53 | -.40 | -.70 | -.53 | | 10.22 | 67.44 |
| TOTAL | | 31 | | | | | | | | | |

914 − 540

ITEM NUMBER 18

| OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 7 | 22.6 | | -.47 | -.52 | -.66 | -.72 | | 10.00 | 64.57 |
| C 1 | 1 | 14 | 45.2 | C | .86 | .72 | 1.08 | .91 | C | 19.29 | 79.86 |
| 2 | 0 | 10 | 32.3 | | -.49 | -.31 | -.64 | -.40 | | 10.80 | 69.00 |
| TOTAL | | 31 | | | | | | | | | |

677 − 393

ITEM NUMBER 19

| OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 10 | 32.3 | | -.33 | -.46 | -.43 | -.60 | | 12.00 | 67.10 |
| C 1 | 1 | 6 | 19.4 | C | .68 | .64 | .97 | .93 | C | 21.[illegible] | 84.33 |
| 2 | 0 | 15 | 48.4 | | -.23 | -.08 | -.28 | -.10 | | [illegible].27 | 72.20 |
| TOTAL | | 31 | | | | | | | | | |

428 − 289

ITEM NUMBER 20

| OPTION | WT | N | P | | COEFFICIENTS OF CORRELATION PB-ST | PB-TT | B-ST | B-TT | | MEANS ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 10 | 32.3 | | -.33 | -.46 | -.43 | -.60 | | 12.00 | 67.10 |
| C 1 | 1 | 7 | 22.6 | C | .66 | .71 | .92 | .99 | C | 20.71 | 84.43 |
| 2 | 0 | 14 | 45.2 | | -.26 | -.17 | -.31 | -.21 | | 13.07 | 71.29 |
| TOTAL | | 31 | | | | | | | | | |

661 − 462



ERIC

TEST NO 1 ACHIEVEMENT MONITORING AN SUBTEST 6 SUBTRACTION ALGORITHM

ITEM NUMBER 21

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 13 | 41.9 | | -.34 | -.51 | -.44 | -.64 | | 12.38 | 67.69 |
| C 1 | 1 | 5 | 16.1 | C | .68 | .68 | 1.03 | 1.02 | C | 22.40 | 86.40 |
| 2 | 0 | 13 | 41.9 | | -.17 | .00 | -.21 | .00 | | 13.46 | 72.92 |
| TOTAL | | 31 | | | | | | | | | |

COEFFICIENTS OF CORRELATION MEANS

685 − 596

ITEM NUMBER 22

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 13 | 41.9 | | -.34 | -.51 | -.44 | -.64 | | 12.38 | 67.69 |
| C 1 | 1 | 5 | 16.1 | C | .63 | .61 | .95 | .92 | C | 21.80 | 85.00 |
| 2 | 0 | 13 | 41.9 | | -.13 | .09 | -.15 | .07 | | 13.69 | 73.46 |
| TOTAL | | 31 | | | | | | | | | |

COEFFICIENTS OF CORRELATION MEANS

620 − 545

ITEM NUMBER 23

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 14 | 45.2 | | -.30 | -.46 | -.37 | -.58 | | 12.79 | 68.50 |
| C 1 | 1 | 2 | 6.5 | C | .44 | .43 | .86 | .83 | C | 23.00 | 87.00 |
| 2 | 0 | 15 | 48.4 | | .08 | .29 | .10 | .31 | | 14.87 | 75.13 |
| TOTAL | | 31 | | | | | | | | | |

COEFFICIENTS OF CORRELATION MEANS

701 − 599

ITEM NUMBER 24

| OPTION | WT | N | P | | PB-ST | PB-TT | B-ST | B-TT | | ST | TT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 16 | 51.6 | | -.12 | -.30 | -.15 | -.38 | | 13.87 | 70.37 |
| C 1 | 1 | 2 | 6.5 | C | .44 | .46 | .86 | .89 | C | 23.00 | 88.00 |
| 2 | 0 | 13 | 41.9 | | -.10 | .08 | -.13 | .10 | | 13.85 | 73.69 |
| TOTAL | | 31 | | | | | | | | | |

COEFFICIENTS OF CORRELATION MEANS

400 − 276

Appendix C

PERFORMANCE BY OBJECTIVE

FOR THE TWO SCHOOLS AND SIX CLASSES

NOTE: For those objectives for which there are three items, the number of subjects represented in the proportion correct at a particular test time is ascertained simply by summing the N's for the three forms; however, when there are more or less than three items, the N is increased or decreased proportionately.

Table

PROGRESS TOWARD OBJECTIVES ACROSS ADMINISTRATION TIMES AS REPRESENTED BY PROPORTION OF STUDENTS ANSWERING ITEMS CORRECTLY FOR:

School 1

| scription of Objectives | Objective | | | Composite Objective | | |
|---|---|---|---|---|---|---|
| | | Administration Time | | | Administration Time | |
| | Number of Items | A-3 | A-4 | Number of Items | A-3 | A-4 |
| merousness | | | | | | |
| writes 0-99 | ~~3~~ | 89.8 | 91.9 | | | |
| represents 0-99 | 3 | 87.8 | 98.4 | 6 | 89.8 | 95.2 |
| dering, Place Value | | | | | | |
| ordering 0-99 | 3 | 84.8 | 96.8 | | | |
| notation 0-99 | 3 | 15.3 | 37.1 | 6 | 50.0 | 66.9 |
| oblem-Solving (Set A) | | | | | | |
| subt-simple separating | 2 | 74.4 | 87.5 | | | |
| add-part part whole | 2 | 100.0 | 95.2 | | | |
| subt-comparison | 2 | 72.5 | 85.7 | | | |
| 11-15 | 3 | 88.1 | 95.2 | | | |
| 0-99 | 3 | 76.3 | 83.9 | 6 | 82.2 | 89.5 |
| oblem-Solving (Set B) | | | | | | |
| subt-join-addend | 2 | 82.5 | 78.6 | | | |
| add-simple joining | 2 | 94.9 | 87.5 | | | |
| subt-part part whole-addend | 2 | 89.7 | 85.1 | | | |
| 11-15 | 3 | 94.9 | 91.9 | | | |
| 0-99 | 3 | 83.1 | 75.8 | 6 | 89.0 | 83.9 |

Table (Continued)

| Description of Objectives | Objective | | | Composite Objective | | |
|---|---|---|---|---|---|---|
| | Number of Items | Administration Time A-3 | A-4 | Number of Items | Administration Time A-3 | A-4 |
| **Sentence-Writing (Set A)** | | | | | | |
| subt-simple separating | 2 | 95.0 | 100.0 | | | |
| add-part part whole | 2 | 94.9 | 100.0 | | | |
| subt-comparison | 2 | 89.7 | 78.6 | | | |
| 11-15 | 3 | 93.2 | 95.2 | | | |
| 0-99 | 3 | 93.2 | 90.3 | 6 | 93.2 | 92.7 |
| **Sentence-Writing (Set B)** | | | | | | |
| subt-join-addend | 2 | 43.6 | 65.0 | | | |
| add-simple joining | 2 | 100.0 | 92.9 | | | |
| subt-part part whole-addend | 2 | 80.0 | 85.7 | | | |
| 11-15 | 3 | 71.2 | 77.4 | | | |
| 0-99 | 3 | 78.0 | 85.5 | 6 | 74.6 | 81.5 |
| **Sentence-Writing (Free Response)** | | | | | | |
| add-simple joining | 2 | 97.4 | 100.0 | | | |
| subt-simple separating | 2 | 97.4 | 100.0 | | | |
| subt-part part whole-addend | 2 | 89.7 | 92.9 | | | |
| add-part part whole | 2 | 97.5 | 100.0 | | | |
| subt-comparison | 2 | 59.0 | 80.0 | | | |
| subt-join-addend | 2 | 60.0 | 61.9 | | | |
| Set A (as above)[1] | 6 | 84.8 | 93.6 | | | |
| Set B (as above)[1] | 6 | 82.2 | 84.7 | | | |
| 11-15 | 6 | 82.2 | 89.1 | | | |
| 0-99 | 6 | 84.8 | 91.1 | 12 | 83.5 | 89.1 |

[1] Though the problem types correspond to Set B, these free response problems have the same wording etc. as the interview items; i.e., the Sentence-Writing Set B items above have alternative wording, number, order, etc.

Table (Continued).

| cription of Objectives | Objective | | | Composite Objectiv | | |
|---|---|---|---|---|---|---|
| | Number of Items | Administration Time A-3 | Administration Time A-4 | Number of Items | Administration Tim A-3 | Administration Tim A-4 |
| lgorithms | | | | | | |
| addition algorithm | 3 | 94.9 | 98.4 | | | |
| subtraction algorithm | 3 | [illegible] | [illegible] | 6 | [illegible] | 92.7 |
| lgorithms (Free Response) (Timed Test) | | | | | | |
| 2-digit addition algorithm | 27 | 92.8 | 94.6 | | | |
| 3-digit addition algorithm | 36 | 80.2 | 88.3 | | | |
| 3 addends | 9 | 34.5 | 64.0 | 72 | 79.2 | 87.6 |
| 2-digit subtraction algorithm | 27 | 78.2 | 83.9 | | | |
| 3-digit subtraction algorithm | 45 | 39.7 | 53.7 | 72 | 54.1 | 65.0 |
| Recall of Basic Facts (Speeded Test) | | | | | | |
| add 0-20 | | | | 36 | 92.2 | 94.5 |
| subt 0-20 | | | | 36 | 84.9 | 90.9 |

| | Administration Time A-3 | Administration Time A-4 |
|---|---|---|
| Form U N = | 20 | 20 |
| Form V N = | 20 | 22 |
| Form W N = | 19 | 20 |

Table

PROGRESS TOWARD OBJECTIVES ACROSS ADMINISTRATION TIMES AS REPRESENTED BY PROPORTION OF STUDENTS ANSWERING ITEMS CORRECTLY FOR:

School 3



| Description of Objectives | Objective | | | Composite Objective | | |
|---|---|---|---|---|---|---|
| | | Administration Time | | | Administration Time | |
| | Number of Items | A-3 | A-4 | Number of Items | A-3 | A-4 |
| **Numerousness** | | | | | | |
| writes 0-99 | 3 | 90.0 | 95.8 | | | |
| represents 0-99 | 3 | 96.8 | 92.8 | 6 | 98.4 | 93.8 |
| **Ordering, Place Value** | | | | | | |
| ordering 0-99 | 3 | 90.3 | 100.0 | | | |
| notation 0-99 | 3 | 32.3 | 42.8 | 6 | 61.3 | 71.4 |
| **Problem-Solving (Set A)** | | | | | | |
| subt-simple separating | 2 | 81.0 | 89.0 | | | |
| add-part part whole | 2 | 100.0 | 90.0 | | | |
| subt-comparison | 2 | 71.4 | 95.2 | | | |
| 11-15 | 3 | 96.8 | 100.0 | | | |
| 0-99 | 3 | 71.0 | 81.3 | 6 | 83.4 | 90.6 |
| **Problem-Solving (Set B)** | | | | | | |
| subt-join-addend | 2 | 96.2 | 100.0 | | | |
| add-simple joining | 2 | 100.0 | 100.0 | | | |
| subt-part part whole-addend | 2 | 95.0 | 76.0 | | | |
| 11-15 | 3 | 90.3 | 96.9 | | | |
| 0-99 | 3 | 77.4 | 87.5 | 6 | 83.9 | 92.2 |

Table (Continued)

| Description of Objectives | Objective | | | Composite Objective | | |
|---|---|---|---|---|---|---|
| | | Administration Time | | | Administration Time | |
| | Number of Items | A-3 | A-4 | Number of Items | A-3 | A-4 |
| **Sentence-Writing (Set A)** | | | | | | |
| subt-simple separating | 2 | 97.0 | 95.2 | | | |
| add-part part whole | 2 | 100.0 | 100. | | | |
| subt-comparison | 2 | 90.0 | 85.0 | | | |
| 11-15 | 3 | 95.6 | 94.6 | | | |
| 0-99 | 3 | 93.6 | 93.5 | 6 | 93.6 | 92.2 |
| **Sentence-Writing (Set B)** | | | | | | |
| subt-join-addend | 2 | 52.4 | 78.5 | | | |
| add-simple joining | 2 | 100.0 | 100.0 | | | |
| subt-part part whole-addend | 2 | 90.5 | 90.5 | | | |
| 11-15 | 3 | 77.4 | 93.8 | | | |
| 0-99 | 3 | 83.9 | 84.4 | 6 | 80.7 | 87.1 |
| **Sentence-Writing (Free Response)** | | | | | | |
| add-simple joining | 2 | 100.0 | 91.5 | | | |
| subt-simple separating | 2 | 100.0 | 100.0 | | | |
| subt-part part whole-addend | 2 | 85.0 | 95.0 | | | |
| add-part part whole | 2 | 100.0 | 95.2 | | | |
| subt-comparison | 2 | 85.7 | 87.0 | | | |
| subt-join-addend | 2 | 61.9 | 85.7 | | | |
| Set A (as above) | 6 | 95.2 | 93.8 | | | |
| Set B (as above)[1] | 6 | 82.3 | 90.6 | | | |
| 11-15 | 6 | 88.7 | 93.8 | | | |
| 0-99 | 6 | 86.7 | 90.6 | 12 | 88.7 | 92.2 |

235





[1] Though the problem types correspond to Set B, these free response problems have the same wording etc. as the interview items; i.e., the Sentence-Writing Set B items above have alternative wording, number order, etc.

Table (Continued)

| Description of Objectives | Objective | | | Composite Objecti | | |
|---|---|---|---|---|---|---|
| | Number of Items | Administration Time A-3 | A-4 | Number of Items | Administration Ti A-3 | A-4 |
| **Algorithms** | | | | | | |
| addition algorithm | 3 | 90.3 | 96.9 | | | |
| subtraction algorithm | 3 | 96.8 | 96.9 | 6 | 93.6 | 96.9 |
| **Algorithms (Free Response) (Timed Test)** | | | | | | |
| 2-digit addition algorithm | 27 | 91.4 | 95.1 | | | |
| 3-digit addition algorithm | 36 | 69.1 | 83.6 | | | |
| 3 addends | 9 | 18.3 | 37.5 | 72 | 71.1 | 82.3 |
| 2-digit subtraction algorithm | 27 | 75.3 | 89.9 | | | |
| 3-digit subtraction algorithm | 45 | 30.5 | 34.8 | 72 | 49.3 | 59.5 |
| **Recall of Basic Facts (Speeded Test)** | | | | | | |
| add 0-20 | | | | 36 | 88.2 | 90.4 |
| subt 0-20 | | | | 36 | 82.5 | 87.2 |

| | Administration Time A-3 | A-4 |
|---|---|---|
| Form U N = | 11 | 12 |
| Form V N = | 10 | 9 |
| Form W N = | 10 | 11 |

Table

PROGRESS TOWARD OBJECTIVES ACROSS ADMINISTRATION TIMES AS REPRESENTED BY PROPORTION OF STUDENTS ANSWERING ITEMS CORRECTLY FOR:

| cription of Objectives | Objective | | | Composite Objective | | |
|---|---|---|---|---|---|---|
| | | Administration Time | | | Administration Time | |
| | Number of Items | A-3 | A-4 | Number of Items | A-3 | A-4 |
| merousness | | | | | | |
| writes 0-99 | 3 | 100.0 | 75.0 | | | |
| represents 0-99 | 3 | 75.0 | 100.0 | 6 | 97.5 | 97.5 |
| dering, Place Value | | | | | | |
| ordering 0-99 | 3 | 75.0 | 100.0 | | | |
| notation 0-99 | 3 | 15.0 | 55.0 | 6 | 55.0 | 77.5 |
| oblem-Solving (Set A)[a] | | | | | | |
| subt-simple separating | 2 | 84.6 | 100.0 | | | |
| add-part part whole | 2 | 100.0 | 100.0 | | | |
| subt-comparison | 2 | 100.0 | 92.9 | | | |
| 11-15 | 3 | 95.0 | 100.0 | | | |
| 0-99 | 3 | 95.0 | 95.0 | 6 | 95.0 | 97.5 |
| oblem-Solving (Set B) | | | | | | |
| subt-join-addend | 2 | 92.3 | 100.0 | | | |
| add-simple joining | 2 | 100.0 | 85.7 | | | |
| subt-part part whole-addend | 2 | 100.0 | 100.0 | | | |
| 11-15 | 3 | 100.0 | 95.0 | | | |
| 0-99 | 3 | 95.0 | 95.0 | 6 | 97.5 | 95.0 |

Table (Continued)

| Description of Objectives | Objective | | | Composite Objective | | |
|---|---|---|---|---|---|---|
| | | Administration Time | | | Administration Time | |
| | Number of Items | A-3 | A-4 | Number of Items | A-3 | A-4 |
| Sentence-Writing (Set A) | | | | | | |
| Subt-simple separating | 2 | 84.6 | 100.0 | | | |
| Add-part part whole | 2 | 100.0 | 100.0 | | | |
| Subt-comparison | 2 | 100.0 | 100.0 | | | |
| 11-15 | 3 | 95.0 | 100.0 | | | |
| 0-99 | 3 | 95.0 | 100.0 | 6 | 95.0 | 100.0 |
| Sentence-Writing (Set B) | | | | | | |
| Subt-join-addend | 2 | 69.2 | 78.6 | | | |
| Add-simple joining | 2 | 100.0 | 91.7 | | | |
| Subt-part part whole-addend | 2 | 100.0 | 100.0 | | | |
| 11-15 | 3 | 90.0 | 85.0 | | | |
| 0-99 | 3 | 90.0 | 95.0 | 6 | 90.0 | 90.0 |
| Sentence-Writing (Free Response) | | | | | | |
| Add-simple joining | 2 | 100.0 | 100.0 | | | |
| Subt-simple separating | 2 | 100.0 | 100.0 | | | |
| Subt-part part whole-addend | 2 | 100.0 | 100.0 | | | |
| Add-part part whole | 2 | 100.0 | 100.0 | | | |
| Subt-comparison | 2 | 100.0 | 100.0 | | | |
| Subt-join-addend | 2 | 100.0 | 100.0 | | | |
| Set A (as above)[1] | 6 | 100.0 | 100.0 | | | |
| Set B (as above)[1] | 6 | 100.0 | 100.0 | | | |
| 11-15 | 6 | 100.0 | 100.0 | | | |
| 0-99 | 6 | 100.0 | 100.0 | 12 | 100.0 | 100.0 |

[1] Though the problem types correspond to Set B, these free response problems have the same wording etc. as the interview B; i.e., the Sentence-Writing Set B items above have alternative wording, number order, etc.

Table (Continued)

| Description of Objectives | Objective | | | Composite Objectiv | |
|---|---|---|---|---|---|
| | | Administration Time | | | Administration Tim |
| | Number of Items | A-3 | A-4 | Number of Items | A-3 A-4 |
| Algorithms | | | | | |
| addition algorithm | 3 | 95.0 | 100.0 | | |
| subtraction algorithm | 3 | 50.0 | 95.0 | 6 | 87.5 97.5 |
| Algorithms (Free Response) (Timed Test) | | | | | |
| 2-digit addition algorithm | 27 | 94.4 | 96.1 | | |
| 3-digit addition algorithm | 36 | 85.8 | 92.5 | | |
| 3 addends | 9 | 48.3 | 83.3 | 72 | 84.4 92.7 |
| 2-digit subtraction algorithm | 27 | 92.2 | 95.8 | | |
| 3-digit subtraction algorithm | 45 | 56.0 | 68.2 | 72 | 69.6 73.3 |
| Recall of Basic Facts (Speeded Test) | | | | | |
| add 0-20 | | | | 36 | 98.3 98.8 |
| subt 0-20 | | | | 36 | 92.1 95.4 |

| | Administration Time | |
|---|---|---|
| | A-3 | A-4 |
| Form U N = | 6 | 8 |
| Form V N = | 7 | 6 |
| Form W N = | 7 | 6 |

Table

PROGRESS TOWARD OBJECTIVES ACROSS ADMINISTRATION TIMES AS REPRESENTED BY PROPORTION OF STUDENTS ANSWERING ITEMS CORRECTLY FOR:

2



| cription of Objectives | Objective | | | Composite Objective | | |
|---|---|---|---|---|---|---|
| | | Administration Time | | | Administration Time | |
| | Number of Items | A-3 | A-4 | Number of Items | A-3 | A-4 |
| merousness | | | | | | |
| written 0-99 | 3 | 100.0 | 93.8 | | | |
| represented 0-99 | 3 | 100.0 | 100.0 | 6 | 100.0 | 96.9 |
| dering, Place Value | | | | | | |
| ordering 0-99 | 3 | 80.0 | 100.0 | | | |
| notation 0-99 | 3 | 20.0 | 25.0 | 6 | 50.0 | 62.5 |
| oblem-Solving (Set A) | | | | | | |
| subt-simple separating | 2 | 90.0 | 83.3 | | | |
| add-part part whole | 2 | 100.0 | 100.0 | | | |
| subt-comparison | 2 | 68.6 | 90.0 | | | |
| 11-15 | 3 | 93.3 | 100.0 | | | |
| 0-99 | 3 | 73.3 | 81.3 | 6 | 83.3 | 70.6 |
| oblem-Solving (Set B) | | | | | | |
| subt-join-addend | 2 | 72.7 | 100.0 | | | |
| add-simple joining | 2 | 100.0 | 100.0 | | | |
| subt-part part whole-addend | 2 | 77.8 | 60.0 | | | |
| 11-15 | 3 | 93.3 | 100.0 | | | |
| 0-99 | 3 | 73.3 | 75.0 | 6 | 83.3 | 87.5 |





ERIC

Table (Continued)

| Description of Objectives | Objective | | | Composite Objective | | |
|---|---|---|---|---|---|---|
| | | Administration Time | | | Administration Time | |
| | Number of Items | A-3 | A-4 | Number of Items | A-3 | A-4 |
| **Sentence-Writing (Set A)** | | | | | | |
| subt-simple separating | 2 | 100.0 | 100.0 | | | |
| add-part part whole | 2 | 100.0 | 100.0 | | | |
| subt-comparison | 2 | 66.7 | 70.0 | | | |
| 11-15 | 3 | 93.3 | 93.8 | | | |
| 0-99 | 3 | 86.7 | 87.5 | 6 | 90.0 | 90.6 |
| **Sentence-Writing (Set B)** | | | | | | |
| subt-join-addend | 2 | 40.0 | 75.0 | | | |
| add-simple joining | 2 | 100.0 | 100.0 | | | |
| subt-part part whole-addend | 2 | 81.8 | 80.0 | | | |
| 11-15 | 3 | 66.7 | 81.3 | | | |
| 0-99 | 3 | 81.0 | 81.3 | 6 | 73.3 | 84.4 |
| **Sentence-Writing (Free Response)** | | | | | | |
| add-simple joining | 2 | 100.0 | 91.7 | | | |
| subt-simple separating | 2 | 100.0 | 100.0 | | | |
| subt-part part whole-addend | 2 | 66.7 | 100.0 | | | |
| add-part part whole | 2 | 100.0 | 100.0 | | | |
| subt-comparison | 2 | 90.0 | 83.3 | | | |
| subt-join-addend | 2 | 54.6 | 70.0 | | | |
| Set A (as above) | 6 | 96.7 | 93.8 | | | |
| Set B (as above)[1] | 6 | 73.3 | 87.5 | | | |
| 11-15 | 6 | 83.3 | 93.8 | | | |
| 0-99 | 6 | 86.7 | 87.5 | 12 | 85.0 | 90.6 |

[1] Although the problem types correspond to Set B, these free response problems have the same wording etc. as the interview ____; i.e., the Sentence-Writing Set B items above have alternative wording, number order, etc.

Table (Continued)

| scription of Objectives | Objective | | | Composite Objectiv | |
|---|---|---|---|---|---|
| | Number of Items | Administration Time A-3 | A-4 | Number of Items | Administration Tim A-3 A-4 |
| Algorithms | | | | | |
| addition algorithm | 3 | 80.0 | 93.8 | | |
| subtraction algorithm | 3 | 92.3 | 100.0 | 6 | 86.7 96.9 |
| Algorithms (Free Response) (Timed Test) | | | | | |
| 2-digit addition algorithm | 27 | 91.1 | 93.1 | | |
| 3-digit addition algorithm | 36 | 71.7 | 81.8 | | |
| 3 addends | 9 | 17.8 | 33.3 | 72 | 72.2 80.0 |
| 2-digit subtraction algorithm | 27 | 68.9 | 84.7 | | |
| 3-digit subtraction algorithm | 45 | 25.8 | 29.6 | 72 | 41.9 50.3 |
| Recall of Basic Facts (Speeded Test) | | | | | |
| add 0-20 | | | | 36 | 83.9 87.5 |
| subt 0-20 | | | | 36 | 72.2 83.9 |

| | Administration Time A-3 | A-4 |
|---|---|---|
| Form U N = | 6 | 6 |
| Form V N = | 5 | 4 |
| Form W N = | 4 | 6 |

Table

PROGRESS TOWARD OBJECTIVES ACROSS ADMINISTRATION TIMES AS REPRESENTED BY PROPORTION OF STUDENTS ANSWERING ITEMS CORRECTLY FOR:

| Description of Objectives | Objective | | | Composite Objective | | |
|---|---|---|---|---|---|---|
| | | Administration Time | | | Administration Time | |
| | Number of Items | A-3 | A-4 | Number of Items | A-3 | A-4 |
| **Numerousness** | | | | | | |
| writes 0-99 | 3 | 75.2 | 91.3 | | | |
| represents 0-99 | 3 | 75.2 | 100.0 | 6 | 95.2 | 95.7 |
| **Ordering, Place Value** | | | | | | |
| ordering 0-99 | 3 | 85.7 | 100.0 | | | |
| notation 0-99 | 3 | 9.5 | 34.8 | 6 | 47.6 | 67.4 |
| **Problem-Solving (Set A)** | | | | | | |
| subt-simp' separating | 2 | 66.7 | 92.9 | | | |
| add-part part whole | 2 | 100.0 | 94.1 | | | |
| subt-comparison | 2 | 69.2 | 93.3 | | | |
| 11-15 | 3 | 95.2 | 95.7 | | | |
| 0-99 | 3 | 61.2 | 91.3 | 6 | 78.6 | 97.5 |
| **Problem-Solving (Set B)** | | | | | | |
| subt-join-addend | 2 | 84.6 | 66.7 | | | |
| add-simple joining | 2 | 100.0 | 100.0 | | | |
| subt-part part whole-addend | 2 | 85.7 | 88.2 | | | |
| 11-15 | 3 | 95.2 | 91.3 | | | |
| 0-99 | 3 | 85.7 | 78.3 | 6 | 90.5 | 84.8 |

Table (Continued)

| Description of Objectives | Objective | | | Composite Objective | | |
|---|---|---|---|---|---|---|
| | Number of Items | Administration Time A-3 | A-4 | Number of Items | Administration Time A-3 | A-4 |
| Sentence-Writing (Set A) | | | | | | |
| Subt-simple separating | 2 | 100.0 | 100.0 | | | |
| Add-part part whole | 2 | 100.0 | 100.0 | | | |
| Subt-comparison | 2 | 85.7 | 70.6 | | | |
| 11-15 | 3 | 90.5 | 95.7 | | | |
| 0-99 | 3 | 100.0 | 82.6 | 6 | 95.2 | 89.1 |
| Sentence-Writing (Set B) | | | | | | |
| Subt-join-addend | 2 | 33.3 | 71.4 | | | |
| Add-simple joining | 2 | 100.0 | 94.1 | | | |
| Subt-part part whole-addend | 2 | 92.3 | 80.0 | | | |
| 11-15 | 3 | 71.4 | 69.6 | | | |
| 0-99 | 3 | 76.2 | 95.7 | 6 | 73.8 | 82.6 |
| Sentence-Writing (Free Response) | | | | | | |
| Add-simple joining | 2 | 93.3 | 100.0 | | | |
| Subt-simple separating | 2 | 92.9 | 100.0 | | | |
| Subt-part part whole-addend | 2 | 71.4 | 100.0 | | | |
| Add-part part whole | 2 | 92.3 | 100.0 | | | |
| Subt-comparison | 2 | 20.0 | 92.9 | | | |
| Subt-join-addend | 2 | 61.5 | 46.7 | | | |
| Set A (as above) | 6 | 66.7 | 97.8 | | | |
| Set B (as above)[1] | 6 | 76.2 | 82.6 | | | |
| 11-15 | 6 | 71.4 | 87.0 | | | |
| 0-99 | 6 | 71.4 | 93.5 | 12 | 71.4 | 90.2 |

[1] Though the problem types correspond to Set B, these free response problems have the same wording etc. as the interview items; i.e., the Sentence-Writing Set B items above have alternative wording, number order, etc.

Table (Continued)

| cription of Objectives | Objective | | | Composite Objectiv | |
|---|---|---|---|---|---|
| | | Administration Time | | | Administration Tim |
| | Number of Items | A-3 | A-4 | Number of Items | A-3 A-4 |
| lgorithms | | | | | |
| addition algorithm | 3 | 100.0 | 95.7 | | |
| subtraction algorithm | 3 | 95.2 | 95.7 | 6 | 97.6 95.7 |
| lgorithms (Free Response) (Timed Test) | | | | | |
| 2-digit addition algorithm | 27 | 92.6 | 15.7 | | |
| 3-digit addition algorithm | 36 | 83.7 | 90.9 | | |
| 3 addends | 9 | 38.1 | 58.0 | 72 | 81.4 88.6 |
| 2-digit subtraction algorithm | 27 | 79.4 | 87.4 | | |
| 3-digit subtraction algorithm | 45 | 38.1 | 57.4 | 72 | 53.6 68.7 |
| Recall of Basic Facts (Speeded Test) | | | | | |
| add 0-20 | | | | 36 | 92.1 92.8 |
| subt 0-20 | | | | 36 | 82.9 87.7 |

| | Administration Time | |
|---|---|---|
| | A-3 | A-4 |
| Form U N = | 7 | 6 |
| Form V N = | | 9 |
| Form W N = | | 8 |

Table

PROGRESS TOWARD OBJECTIVES ACROSS ADMINISTRATION TIMES AS REPRESENTED BY PROPORTION OF STUDENTS ANSWERING ITEMS CORRECTLY FOR:



| Description of Objectives | Objective | | | Composite Objective | | |
|---|---|---|---|---|---|---|
| | | Administration Time | | | Administration Time | |
| | Number of Items | A-3 | A-4 | Number of Items | A-3 | A-4 |
| **Numerousness** | | | | | | |
| writes 0-99 | 3 | 80.0 | 80.0 | | | |
| represents 0-99 | 3 | 100.0 | 100.0 | 6 | 90.0 | 90.0 |
| **Ordering, Place Value** | | | | | | |
| ordering 0-99 | 3 | 80.0 | 80.0 | | | |
| notation 0-99 | 3 | 20.0 | 20.0 | 6 | 50.0 | 50.0 |
| **Problem-Solving (Set A)** | | | | | | |
| subt-simple separating | 2 | 66.7 | 66.7 | | | |
| add-part part whole | 2 | 100.0 | 100.0 | | | |
| subt-comparison | 2 | 75.0 | 75.0 | | | |
| 11-15 | 3 | 80.0 | 80.0 | | | |
| 0-99 | 3 | 80.0 | 80.0 | 6 | 80.0 | 80.0 |
| **Problem-Solving (Set B)** | | | | | | |
| subt-join-addend | 2 | 75.0 | 75.0 | | | |
| add-simple joining | 2 | 66.7 | 66.7 | | | |
| subt-part part whole-addend | 2 | 100.0 | 100.0 | | | |
| 11-15 | 3 | 100.0 | 100.0 | | | |
| 0-99 | 3 | 60.0 | 60.0 | 6 | 80.0 | 80.0 |

Table (Continued)

| scription of Objectives | Objective | | | Composite Objective | | |
|---|---|---|---|---|---|---|
| | | Administration Time | | | Administration Time | |
| | Number of Items | A-3 | A-4 | Number of Items | A-3 | A-4 |
| ntence-Writing (Set A) | | | | | | |
| subt-simple separating | 2 | 100.0 | 100.0 | | | |
| add-part part whole | 2 | 100.0 | 100.0 | | | |
| subt-comparison | 2 | 100.0 | 100.0 | | | |
| 11-15 | 3 | 100.0 | 100.0 | | | |
| 0-99 | 3 | 100.0 | 100.0 | 6 | 100.0 | 100.0 |
| ntence-Writing (Set B) | | | | | | |
| subt-join-addend | 2 | 33.0 | 33.0 | | | |
| add-simple joining | 2 | 100.0 | 100.0 | | | |
| subt-part part whole-addend | 2 | 50.0 | 50.0 | | | |
| 11-15 | 3 | 60.0 | 60.0 | | | |
| 0-99 | 3 | 60.0 | 60.0 | 6 | 60.0 | 60.0 |
| ntence-Writing (Free Response) | | | | | | |
| add-simple joining | 2 | 100.0 | 100.0 | | | |
| subt-simple separating | 2 | 100.0 | 100.0 | | | |
| subt-part part whole-addend | 2 | 100.0 | 100.0 | | | |
| add-part part whole | 2 | 100.0 | 100.0 | | | |
| subt-comparison | 2 | 66.7 | 66.7 | | | |
| subt-join-addend | 2 | 25.0 | 25.0 | | | |
| Set A (as above)[1] | 6 | 90.0 | 90.0 | | | |
| Set B (as above)[1] | 6 | 70.0 | 70.0 | | | |
| 11-15 | 6 | 70.0 | 70.0 | | | |
| 0-99 | 6 | 90.0 | 90.0 | 12 | 80.0 | 80.0 |







[1] ...ugh the problem types correspond to Set B, these free response problems have the same wording etc. as the interview ...; i.e., the Sentence-Writing Set B items above have alternative wording, number order, etc.

Table (Continued)

| Description of Objectives | Number of Items | Objective Administration Time A-3 | Objective Administration Time A-4 | Number of Items | Composite Objective Administration Time A-3 | Composite Objective Administration Time A-4 |
|---|---|---|---|---|---|---|
| **Algorithms** | | | | | | |
| addition algorithm | 3 | 100.0 | 100.0 | | | |
| subtraction algorithm | 3 | 60.0 | 60.0 | 6 | 80.0 | 80.0 |
| **Algorithms (Free Response) (Timed Test)** | | | | | | |
| 2-digit addition algorithm | 27 | 84.4 | 84.4 | | | |
| 3-digit addition algorithm | 36 | 66.7 | 66.7 | | | |
| 3 addends | 9 | 20.0 | 20.0 | 72 | 67.5 | 67.5 |
| 2-digit subtraction algorithm | 27 | 55.6 | 55.6 | | | |
| 3-digit subtraction algorithm | 45 | 24.0 | 24.0 | 72 | 35.8 | 35.8 |
| **Recall of Basic Facts (Speeded Test)** | | | | | | |
| add 0-20 | | | | 36 | 91.7 | 91.7 |
| subt 0-20 | | | | 36 | 80.0 | 80.0 |

| | Administration Time A-3 | Administration Time A-4 |
|---|---|---|
| Form U N = | 2 | 2 |
| Form V N = | 2 | 2 |
| Form W N = | 1 | 1 |

Table

PROGRESS TOWARD OBJECTIVES ACROSS ADMINISTRATION TIMES AS REPRESENTED BY PROPORTION OF STUDENTS ANSWERING ITEMS CORRECTLY FOR:

| scription of Objectives | Objective | | | Composite Objective | | |
|---|---|---|---|---|---|---|
| | | Administration Time | | | Administration Time | |
| | Number of Items | A-3 | A-4 | Number of Items | A-3 | A-4 |
| merousness | | | | | | |
| writes 0-99 | 3 | 100.0 | 93.8 | | | |
| represents 0-99 | 3 | 93.3 | 87.5 | 6 | 96.7 | 90.6 |
| dering, Place Value | | | | | | |
| ordering 0-99 | 3 | 100.0 | 100.0 | | | |
| notation 0-99 | 3 | 46.7 | 62.5 | 6 | 73.3 | 81.3 |
| oblem-Solving (Set A) | | | | | | |
| subt-simple separating | 2 | 80.0 | 90.9 | | | |
| add-part part whole | 2 | 100.0 | 80.0 | | | |
| subt-comparison | 2 | 80.0 | 100.0 | | | |
| 11-15 | 3 | 100.0 | 100.0 | | | |
| 0-99 | 3 | 73.0 | 81.3 | 6 | 86.7 | 90.6 |
| oblem-Solving (Set B) | | | | | | |
| subt-join-addend | 2 | 80.0 | 100.0 | | | |
| add-simple joining | 2 | 100.0 | 100.0 | | | |
| subt-part part whole-addend | 2 | 70.0 | 90.0 | | | |
| 11-15 | 3 | 86.7 | 93.8 | | | |
| 0-99 | 3 | 80.0 | 100.0 | 6 | 83.3 | 76.9 |

249





ERIC

Table (Continued)

| Description of Objectives | Objective | | | Composite Objective | | |
|---|---|---|---|---|---|---|
| | | Administration Time | | | Administration Time | |
| | Number of Items | A-3 | A-4 | Number of Items | A-3 | A-4 |
| **Sentence-Writing (Set A)** | | | | | | |
| subt-simple separating | 2 | 100.0 | 90.9 | | | |
| add-part part whole | 2 | 100.0 | 100.0 | | | |
| subt-comparison | 2 | 100.0 | 90.0 | | | |
| 11-15 | 3 | 100.0 | 87.5 | | | |
| 0-99 | 3 | 100.0 | 100.0 | 6 | 100.0 | 93.8 |
| **Sentence-Writing (Set B)** | | | | | | |
| subt-join-addend | 2 | 70.0 | 81.8 | | | |
| add-simple joining | 2 | 100.0 | 100.0 | | | |
| subt-part part whole-addend | 2 | 100.0 | 100.0 | | | |
| 11-15 | 3 | 86.7 | 100.0 | | | |
| 0-99 | 3 | 93.3 | 87.5 | 6 | 90.0 | 93.8 |
| **Sentence-Writing (Free Response)** | | | | | | |
| add-simple joining | 2 | 100.0 | 90.9 | | | |
| subt-simple separating | 2 | 100.0 | 100.0 | | | |
| subt-part part whole-addend | 2 | 100.0 | 90.0 | | | |
| add-part part whole | 2 | 100.0 | 90.9 | | | |
| subt-comparison | 2 | 80.0 | 90.9 | | | |
| subt-join-addend | 2 | 70.0 | 100.0 | | | |
| Set A (as above) | 6 | 93.3 | 93.8 | | | |
| Set B (as above)[1] | 6 | 90.0 | 93.8 | | | |
| 11-15 | 6 | 93.3 | 93.8 | | | |
| 0-99 | 6 | 90.0 | 93.8 | 12 | 91.7 | 93.8 |





[1] Though the problem types correspond to Set B, these free response problems have the same wording etc. as the interview items; i.e., the Sentence-Writing Set B items above have alternative wording, number order, etc.

Table (Continued)

| cription of Objectives | Objective | | | Composite Objectiv | | |
|---|---|---|---|---|---|---|
| | Number of Items | Administration Time A-3 | A-4 | Number of Items | Administration Tim A-3 | A-4 |
| lgorithms | | | | | | |
| addition algorithm | 3 | 100.0 | 100.0 | | | |
| subtraction algorithm | 3 | 100.0 | 93.8 | 6 | 100.0 | 96.9 |
| lgorithms (Free Response) (Timed Test) | | | | | | |
| 2-digit addition algorithm | 27 | 91.9 | 97.2 | | | |
| 3-digit addition algorithm | 36 | 65.0 | 85.4 | | | |
| 3 addends | 9 | 20.0 | 41.7 | 72 | 69.4 | 84.4 |
| 2-digit subtraction algorithm | 27 | 85.9 | 95.1 | | | |
| 3-digit subtraction algorithm | 45 | 37.3 | 40.0 | 72 | 55.6 | 60.7 |
| Recall of Basic Facts (Speeded Test) | | | | | | |
| add 0-20 | | | | 36 | 91.7 | 93.2 |
| subt 0-20 | | | | 36 | 91.7 | 90.6 |

| | Administration Time A-3 | A-4 |
|---|---|---|
| Form U N = | 5 | 6 |
| Form V N = | 5 | 5 |
| Form W N = | 5 | 5 |

251

Table

PROGRESS TOWARD OBJECTIVES ACROSS ADMINISTRATION TIMES AS REPRESENTED BY PROPORTION OF STUDENTS ANSWERING ITEMS CORRECTLY FOR:



| scription of Objectives | Objective | | | Composite Objective | | |
|---|---|---|---|---|---|---|
| | | Administration Time | | | Administration Time | |
| | Number of Items | A-3 | A-4 | Number of Items | A-3 | A-4 |
| umerousness | | | | | | |
| writes 0-99 | 3 | 71.4 | 92.9 | | | |
| represents 0-99 | 3 | 71.4 | 92.9 | 6 | 71.4 | 92.9 |
| rdering, Place Value | | | | | | |
| ordering 0-99 | 3 | 71.4 | 92.9 | | | |
| notation 0-99 | 3 | 21.4 | 21.4 | 6 | 46.4 | 57.1 |
| roblem-Solving (Set A) | | | | | | |
| subt-simple separating | 2 | 66.7 | 66.7 | | | |
| add-part part whole | 2 | 100.0 | 90.0 | | | |
| subt-comparison | 2 | 40.0 | 66.7 | | | |
| 11-15 | 3 | 71.4 | 92.9 | | | |
| 0-99 | 3 | 64.3 | 57.1 | 6 | 67.9 | 75.0 |
| roblem-Solving (Set B) | | | | | | |
| subt-join-addend | 2 | 70.0 | 66.7 | | | |
| add-simple joining | 2 | 88.9 | 77.8 | | | |
| subt-part part whole-addend | 2 | 77.8 | 60.0 | | | |
| 11-15 | 3 | 85.1 | 85.7 | | | |
| 0-99 | 3 | 71.4 | 50.0 | 6 | 78.6 | 67.9 |

417 418

Table (Continued)

| Description of Objectives | Objective | | | Composite Objective | | |
|---|---|---|---|---|---|---|
| | | Administration Time | | | Administration Time | |
| | Number of Items | A-3 | A-4 | Number of Items | A-3 | A-4 |
| Sentence-Writing (Set A) | | | | | | |
| Subt-simple separating | 2 | 100.0 | 100.0 | | | |
| Add-part part whole | 2 | 77.8 | 100.0 | | | |
| Subt-comparison | 2 | 66.7 | 60.0 | | | |
| 11-15 | 3 | 85.7 | 85.7 | | | |
| 0-99 | 3 | 78.6 | 85.7 | 6 | 82.1 | 85.7 |
| Sentence-Writing (Set B) | | | | | | |
| Subt-join-addend | 2 | 22.2 | 44.4 | | | |
| Add-simple joining | 2 | 100.0 | 90.0 | | | |
| Subt-part part whole-addend | 2 | 50.0 | 88.9 | | | |
| 11-15 | 3 | 50.0 | 85.7 | | | |
| 0-99 | 3 | 64.3 | 64.3 | 6 | 57.1 | 75.0 |
| Sentence-Writing (Free Response) | | | | | | |
| Add-simple joining | 2 | 100.0 | 100.0 | | | |
| Subt-simple separating | 2 | 100.0 | 100.0 | | | |
| Subt-part part whole-addend | 2 | 100.0 | 70.0 | | | |
| Add-part part whole | 2 | 100.0 | 100.0 | | | |
| Subt-comparison | 2 | 66.7 | 33.0 | | | |
| Subt-join-addend | 2 | 20.0 | 44.0 | | | |
| Set A (as above)[1] | 6 | 89.3 | 78.6 | | | |
| Set B (as above) | 6 | 71.4 | 71.4 | | | |
| 11-15 | 6 | 78.6 | 75.0 | | | |
| 0-99 | 6 | 82.1 | 75.0 | 12 | 80.4 | 75.0 |

[1] Though the problem types correspond to Set B, these free response problems have the same wording etc. as the interview items; i.e., the Sentence-Writing Set B items above have alternative wording, number order, etc.

Table (Continued)

| Description of Objectives | Objective | | | Composite Objecti | |
|---|---|---|---|---|---|
| | | Administration Time | | | Administration Ti |
| | Number of Items | A-3 | A-4 | Number of Items | A-3 A-4 |
| **Algorithms** | | | | | |
| addition algorithm | 3 | 85.1 | [illegible] | | |
| subtraction algorithm | 3 | 78.6 | [illegible] | 6 | 82.1 85.7 |
| **Algorithms (Free Response)** (Timed Test) | | | | | |
| 2-digit addition algorithm | 27 | 93.1 | 94.4 | | |
| 3-digit addition algorithm | 36 | 72.6 | 85.7 | | |
| 3 addends | 9 | 11.9 | 61.9 | 72 | 72.9 86.0 |
| 2-digit subtraction algorithm | 27 | 59.5 | 72.2 | | |
| 3-digit subtraction algorithm | 45 | 21.4 | 37.1 | 72 | 35.7 50.2 |
| **Recall of Basic Facts (Speeded Test)** | | | | | |
| add 0-20 | | | | 36 | 84.5 92.3 |
| subt 0-20 | | | | 36 | 80.4 93.5 |

| | Administration Time | |
|---|---|---|
| | A-3 | A-4 |
| Form U N = | 5 | 4 |
| Form V N = | 5 | 5 |
| Form W N = | 4 | 5 |